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CCNA 2 Final Exam Question ans Answer

Set-1

- **Total 5 Set Question and Answer**

1. Which of the following are required when adding a network to the OSPF routing process configuration? network address loopback address

autonomous system number

subnet mask

wildcard mask area ID

2. Which of the following are primary functions of a router? (Choose two.)

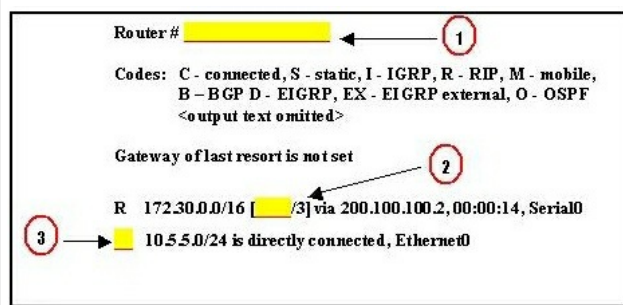
packet switching

microsegmentation

domain name resolution

path selection

flow control



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3. Refer to the exhibit. When troubleshooting a network, it is important to interpret the output of various router commands. On the basis of the exhibit, which three statements are true? (Choose three.) The missing information for Blank 1 is the command show ip route.

The missing information for Blank 1 is the command debug ip route.

The missing information for Blank 2 is the number 100.

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The missing information for Blank 2 is the number 120.

The missing information for Blank 3 is the letter R.

The missing information for Blank 3 is the letter C.

```
A# show ip route
<output omitted>
Gateway of last resort is not set

S  10.0.0.0/8 [1/0] via 172.16.40.2
  64.0.0.0/16 is subnetted, 1 subnets
C   64.100.0.0 is directly connected, Serial0/1
C  128.107.0.0/16 is directly connected, Loopback2
  172.16.0.0/24 is subnetted, 1 subnets
C   172.16.40.0 is directly connected, Serial0/0
C  192.168.1.0/24 is directly connected, FastEthernet0/0
S  192.168.2.0/24 [1/0] via 172.16.40.2
C  198.133.219.0/24 is directly connected, Loopback0
A#
```

4. Refer to the exhibit. Packets destined to which two networks will require the router to perform a recursive lookup? (Choose two.)

10.0.0.0/8

64.100.0.0/16

128.107.0.0/16

172.16.40.0/24

192.168.1.0/24

192.168.2.0/24

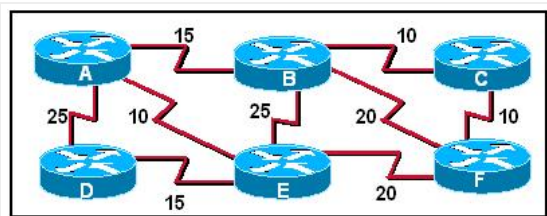
5. When would the network administrator use the ip bandwidth-percent eigrp as-number percent command?

when there is a low bandwidth connection

when the connection is on a shared medium

when the connection is serial instead of Ethernet

when the link is always busy



6. Refer to the exhibit. Cost for each path are shown. If all routers are configured to use OSPF, what would be the path of a packet sent from Router C to Router D if Router A was down?

C-B-E-D

C-B-A-D

C-F-E-D

C-F-B-A-D

C-F-E-A-D

7. What OSPF packet type is used to elect the designated router (DR) and backup designated router (BDR) on multiaccess networks?

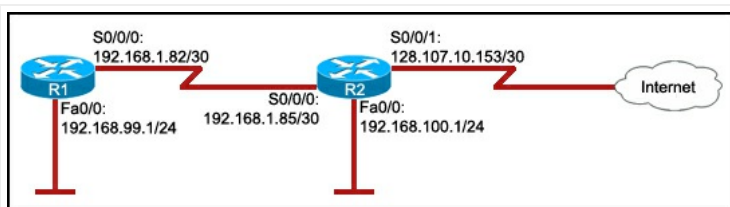
hello

LSU

LSR

DBD

LSAck



8. Refer to the exhibit. The hosts on the R1 LAN are unable to access the Internet. What is incorrectly configured?

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CCNA4 Final Exam Answer CCNA4 Final Answer Set-1 1 Refer to the exhibit. Branch A has a non-Cisco router that is using IETF encapsulation and Branch B has...

CCNA3 Final Exam Answer, CCNA3 Final CCNA-3 Final Question and Answer 1. Refer to the exhibit. After entering the commands in the exhibit, the administrator receives a "pa...



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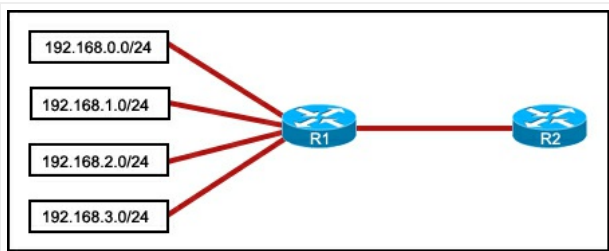
Internet. What is incorrectly configured?

the IP address of the Fa0/0 interface at R1

the IP address of the So0/0/1 interface at R2

the IP address of the So0/0/0 interface at R1

the subnet mask of the So0/0/1 interface at R2



9. Refer to the exhibit. Which summarization should R1 use to advertise its networks to R2?

192.168.1.0/24

192.168.0.0/24

192.168.0.0/22

192.168.1.0/22

```
R1# debug ip rip
RIP debugging protocol is on
R1#
*R1 1 13:20:00.309: RIP: received v1 update from 172.16.1.1 on Serial0/0/0
*R1 1 13:20:00.410:      192.168.1.0 in 2 hops
*R1 1 13:20:00.410:      192.168.100.0 in 1 hops
*R1 1 13:20:00.309: RIP: received v1 update from 172.16.2.1 on Serial0/0/1
*R1 1 13:20:00.309:      192.168.1.0 in 1 hops
*R1 1 13:20:00.311:      192.168.100.0 in 2 hops
*R1 1 13:21:00.409: RIP: sending v1 update to 255.255.255.255 via
Serial0/0/0 (172.16.1.2)
*R1 1 13:20:00.103: RIP: build update entries
*R1 1 13:20:00.309: network 192.168.9.0 metric 1
*R1 1 13:20:00.309: network 192.168.2.0 metric 1
*R1 1 13:20:00.309: network 192.168.3.0 metric 1
<output omitted>
```

10. Refer to the exhibit. What are two of the routes added to the routing table of R1? (Choose two.)

R 172.16.1.0/24 [120/1] via 192.168.3.0, 00:00:24, Serial0/0/0

R 192.168.1.0/24 [120/1] via 172.16.2.1, 00:00:24, Serial0/0/1

R 192.168.9.0/24 [120/1] via 172.16.1.2, 00:00:24, Serial0/0/0

R 192.168.100.0/24 [120/1] via 172.16.1.1, 00:00:24, Serial0/0/0

R 192.168.2.0/24 [120/1] via 172.16.1.2, 00:00:24, Serial0/0/0

11. A router boots and enters setup mode. What is the reason for this?

The IOS image is corrupt.

Cisco IOS is missing from flash memory.

The configuration file is missing from NVRAM.

The POST process has detected hardware failure.

```
R2#show ip rip database
192.168.3.0/24 directly connected, FastEthernet0/0
192.168.4.0/24 directly connected, Serial0/0/1
192.168.5.0/24
[1] via 192.168.4.1, Serial0/0/1
192.168.6.0/24 ←
[1] via 192.168.4.1, Serial0/0/1
192.168.7.0/24
[1] via 192.168.4.1, Serial0/0/1
192.168.8.0/24
[2] via 192.168.4.1, Serial0/0/1
R2#show ip route
<output omitted>
Gateway of last resort is not set
D 192.168.1.0/24 [90/2172416] via 192.168.2.1, 00:00:24, Serial0/0/0
C 192.168.2.0/24 is directly connected, Serial0/0/0
C 192.168.3.0/24 is directly connected, FastEthernet0/0
C 192.168.4.0/24 is directly connected, Serial0/0/1
R 192.168.5.0/24 [120/1] via 192.168.4.1, 00:00:08, Serial0/0/1
D 192.168.6.0/24 [90/2172416] via 192.168.2.1, 00:00:24, Serial0/0/0
R 192.168.7.0/24 [120/1] via 192.168.4.1, 00:00:08, Serial0/0/1
R 192.168.8.0/24 [120/2] via 192.168.4.1, 00:00:08, Serial0/0/1
```

12. Refer to the exhibit. A router learns a route to the 192.168.6.0 network, as shown in the output of the show ip rip database command. However, upon running the show ip route command, the network administrator sees that the router has installed a different route to the 192.168.6.0 network learned via EIGRP. What could be the reason for the missing RIP route?

Compared to RIP, EIGRP has a lower administrative distance.

Compared to EIGRP, RIP has a higher metric value for the route.

Compared to RIP, the EIGRP route has fewer hops.

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application layer
protocol is commonly
used to support fo...

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Which statement is
true about the
differences between
a WAN an...

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Compared to RIP, EIGRP has a faster update timer.

13. All routers in a network are configured in a single OSPF area with the same priority value. No loopback interface has been set on any of the routers.

Which secondary value will the routers use to determine the router ID?

The highest MAC address among the active interfaces of the network will be used.

There will be no router ID until a loopback interface is configured.

The highest IP address among the active FastEthernet interfaces that are running OSPF will be used.

The highest IP address among the active interfaces will be used.

```
R2# show ip eigrp topology
IP-EIGRP Topology Table for AS(80)/ID(192.168.101.1)

Codes: P - Passive, A - Active, U - Update, Q - Query, R - Reply,
       r - reply Status, s - sia Status

P 192.168.1.0/30, 1 successors, FD is 128256
   Via Connected, Serial0/0/0
R2#

R1# show ip eigrp topology
IP-EIGRP Topology Table for AS(50)/ID(192.168.100.5)

Codes: P -
       Passive, A - Active, U - Update, Q - Query, R - Reply,
       r - reply Status, s - sia Status

P 192.168.1.0/30, 1 successors, FD is 20512000
   via Connected, Serial0/0/0
```

14. Refer to the exhibit. Routers R1 and R2 are directly connected via their serial interfaces and are both running the EIGRP routing protocol. R1 and R2 can ping the directly connected serial interface of their neighbor, but they cannot form an EIGRP neighbor adjacency.

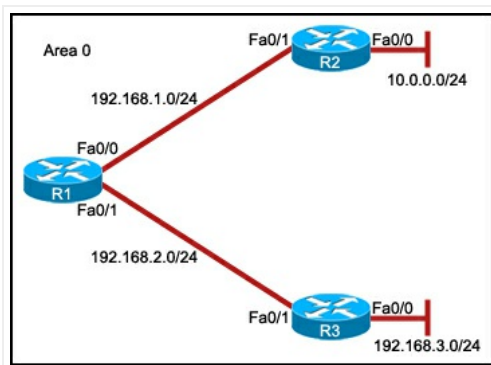
What action should be taken to solve this problem?

Enable the serial interfaces of both routers.

Configure EIGRP to send periodic updates.

Configure the same hello interval between the routers.

Configure both routers with the same EIGRP process ID.



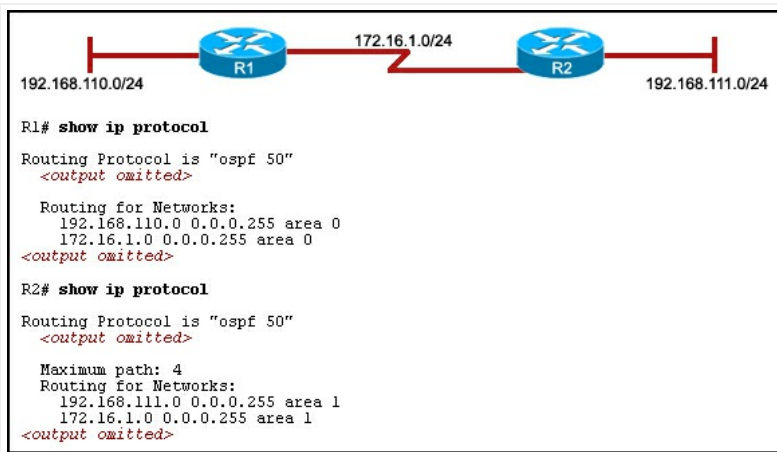
15. Refer to the exhibit. The interfaces of all routers are configured for OSPF area 0. R3 can ping R1, but the two routers are unable to establish a neighbor adjacency. What should the network administrator do to troubleshoot this problem?

Check if the interfaces of the routers are enabled.

Check the hello and dead intervals between the routers.

Check the process ID of both routers.

Check if CDP is enabled on all the routers.



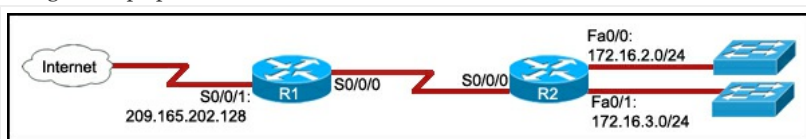
16. Refer to the exhibit. The hosts that are connected to R2 are unable to ping the hosts that are connected to R1. How can this problem be resolved?

Configure the router ID on both routers.

Configure the R2 router interfaces for area 0.

Configure a loopback interface on both routers.

Configure the proper subnet masks on the router interfaces.



17. Refer to the exhibit. The command `ip route 0.0.0.0 0.0.0.0 So/o/o` is run on router R2. What are the two results of this command? (Choose two.)

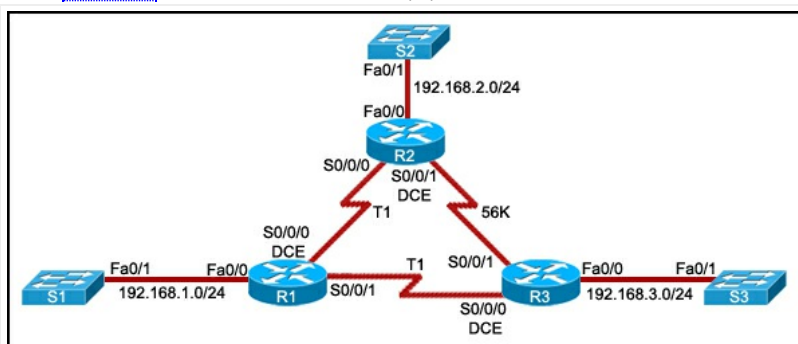
A static route will be updated in the routing table.

The traffic from the Internet will be directed to R2.

The traffic from the source network 172.16.0.0/22 will be blocked.

The route will be specified as the default route for all networks not defined in the routing table.

All the [broadcasts](#) will be forwarded via the So/o/o interface of R2.



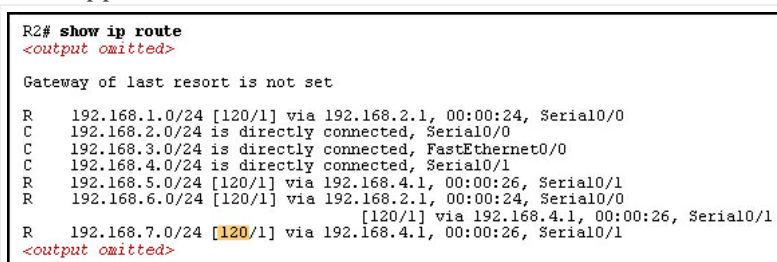
18. Refer to the exhibit. All routers are properly configured with default configurations and are running the OSPF routing protocol. The network is fully converged. A host on the 192.168.3.0/24 network is communicating with a host on the 192.168.2.0/24 network. Which path will be used to transmit the data?

The data will be transmitted via R3-R2.

The data will be transmitted via R3-R1-R2.

The traffic will be load-balanced between two paths — one via R3-R2, and the other via R3-R1-R2.

The data will be transmitted via R3-R2, and the other path via R3-R1-R2 will be retained as the backup path.



19. Refer to the exhibit. What is the meaning of the highlighted value 120?

It is the metric that is calculated by the routing protocol.

It is the value that is used by the DUAL algorithm to determine the bandwidth for the link.

It is the administrative distance of the routing protocol.

It is the hold-down time, measured in seconds, before the next update.

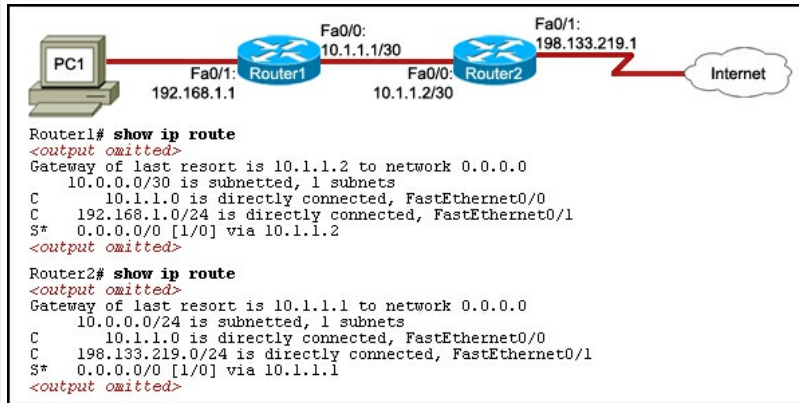
20. In a complex lab test environment, a router has discovered four paths to 192.168.1.0/24 via the use of the RIP routing process. Which route will be installed in the routing table after the discovery of all four paths?

R 192.168.1.0/24 [120/3] via 192.168.110.1, 00:00:17, Serial0/1/0

R 192.168.1.0/24 [120/2] via 192.168.200.1, 00:00:17, Serial0/0/0

R 192.168.1.0/24 [120/1] via 192.168.100.1, 00:00:17, Serial0/0/1

R 192.168.1.0/24 [120/4] via 192.168.101.1, 00:00:17, Serial0/1/1



21. Refer to the exhibit. PC1 is unable to access the Internet. What is the cause of the problem?

An incorrect IP address is configured between the two routers.

No static route is configured on Router2.

A routing loop has occurred.

No routing protocol is configured on either of the two routers.

22. How does route poisoning prevent routing loops?

New routing updates are ignored until the network has converged.

Failed routes are advertised with a metric of infinity.

A route is marked as unavailable when its Time to Live is exceeded.

The unreachable route is cleared from the routing table after the invalid timer expires.

23. Which statement is true about the metrics used by routing protocols?

A metric is a value used by a particular routing protocol to compare paths to remote networks.

A common metric is used by all routing protocols.

The metric with the highest value is installed in the routing table.

The router may use only one parameter at a time to calculate the metric.

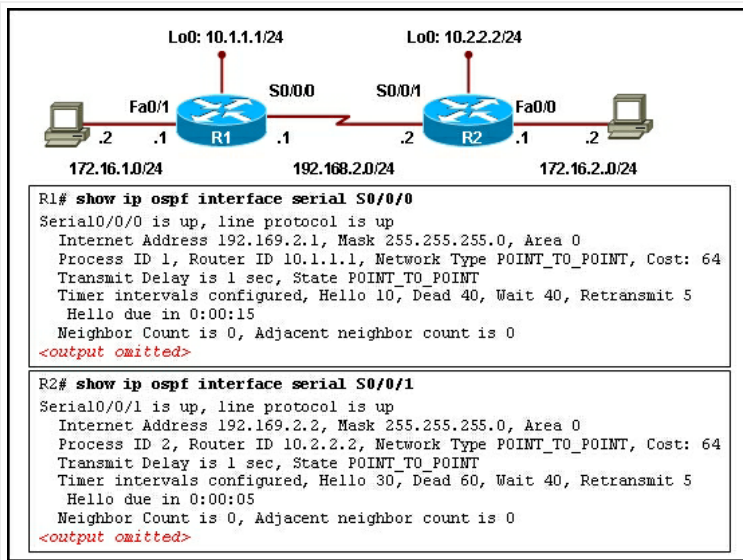
24. Which statement correctly describes a feature of RIP?

RIP is a link-state routing protocol.

RIP uses only one metric—hop count—for path selection.

Advertised routes with hop counts greater than 10 are unreachable.

Messages are broadcast every 10 seconds.



25. Refer to the exhibit. OSPF is used for the routing protocol and all interfaces are configured with the correct IP addresses and subnet masks. During testing, it is found that router R1 is unable to form an adjacency with R2. What is the cause of this problem?

- Both routers have been configured with incorrect router IDs.
- Both routers have been configured in different OSPF areas.
- Both routers have been configured with an incorrect network type.
- Both routers have been configured with different hello and dead intervals.

26. A network administrator is in charge of two separate networks that share a single building. What device will be required to connect the two networks and add a common connection to the Internet that can be shared?

- hub
- router
- access point
- Ethernet switch

27. Which network and mask combination requires the use of a classless addressing solution?

- 10.32.0.0/11
- 172.16.0.0/12
- 192.168.0.0/24
- 192.168.128.32/27

28. A company is using static routes that are configured with an administrative distance of "1" on all routers in the network. The network administrator decides to introduce a dynamic routing protocol to reduce the manual configurations for the static routes. Which option identifies the correct procedure for the dynamic routing to take place in the network?

- The static routes and the dynamic routes will have the traffic alternate between them.
- The static routes will be automatically removed once the dynamic routing is configured.
- The static routes will be automatically updated with the next hop IP address once the dynamic routing is configured.
- The static routes must be manually removed from all routers in order for the dynamic routes to be installed in the routing table.

```

hostname Router1
!
enable password C1$c0R0x!
!
<output omitted>
!
interface FastEthernet0/0
ip address 10.1.1.1 255.255.255.0
duplex auto
speed auto
!
line con 0
password $ecUr1Ty!
line vty 0 4
login
!
!
end

```

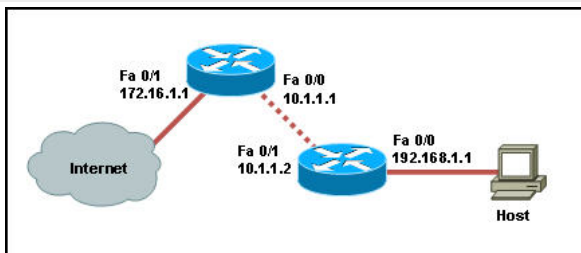
29. Refer to the exhibit. Based on the partial output in the exhibit, why can users establish a console connection to this router without entering a password?

The login command was not entered on the console line.

The enable password should be an enable secret password.

No username and password combination has been configured.

Console connections cannot be configured to require users to provide passwords.



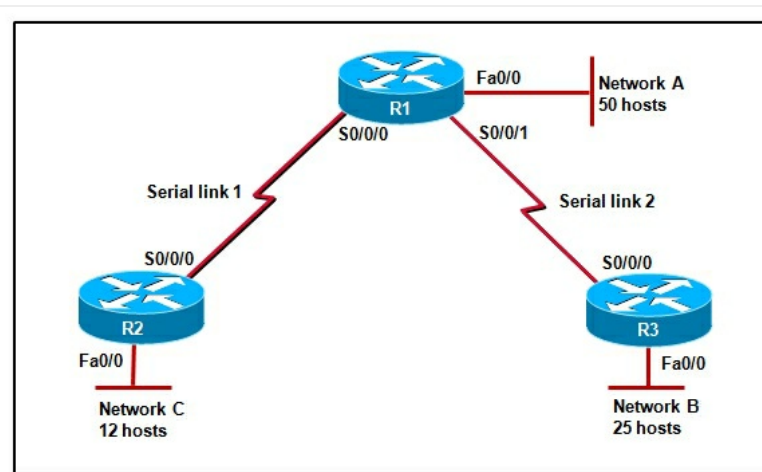
30. Refer to the exhibit. When a static IP address is being configured on the host, what address should be used for the default gateway?

10.1.1.1

10.1.1.2

172.16.1.1

192.168.1.1



31. Refer to the exhibit. The entire 192.168.1.0 network has been allocated to address hosts in the diagram. Utilizing VLSM with contiguous address blocks, which set of addresses and prefixes could be used to create an addressing solution with a minimum waste of IP addresses?

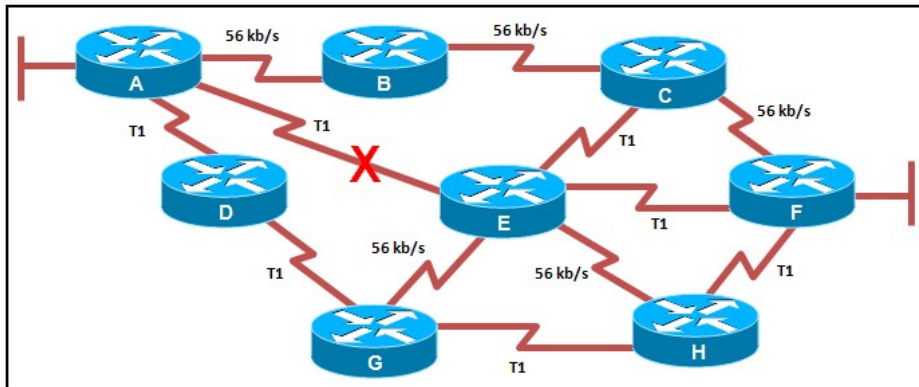
Correct answer is image 4.

Network A	192.168.1.0/28
Network B	192.168.1.32/28
Network C	192.168.1.60/29
Serial link 1	192.168.1.96/30
Serial link 2	192.168.1.100/30

Network A 192.168.1.0/24
 Network B 192.168.1.64/24
 Network C 192.168.1.96/24
 Serial link 1 192.168.1.112/30
 Serial link 2 192.168.1.116/30

Network A 192.168.1.0/25
 Network B 192.168.1.128/25
 Network C 192.168.1.224/28
 Serial link 1 192.168.1.240/30
 Serial link 2 192.168.1.244/30

Network A 192.168.1.0/26
 Network B 192.168.1.64/27
 Network C 192.168.1.96/28
 Serial link 1 192.168.1.112/30
 Serial link 2 192.168.1.116/30

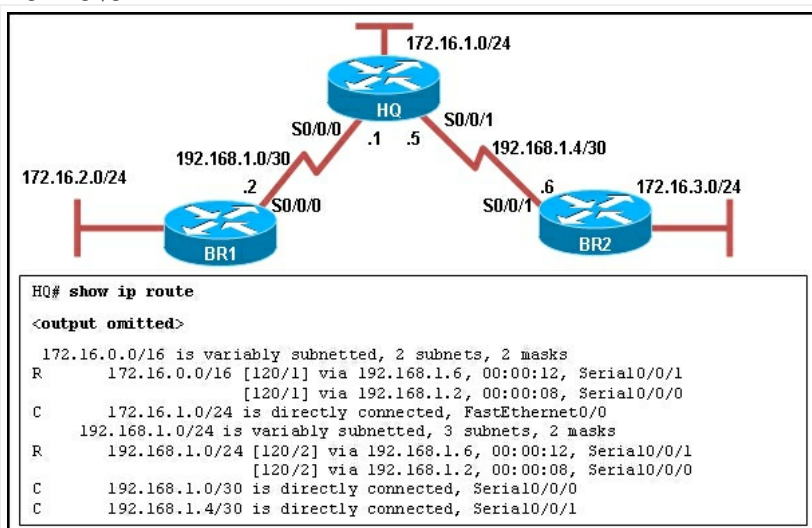


32. Refer to the exhibit. The network is configured for OSPF routing with default settings. The bandwidths have been configured correctly for each link. If the T1 link between router A and router E fails, what path will a packet from router A take to reach the LAN attached to router F when the network has converged?

- A, B, C, F
- A, B, C, E, F
- A, D, G, E, F
- A, D, G, H, F

33. Which candidate route has the longest match for a packet with a destination address of 10.30.16.48?

- 10.30.0.0/16
- 10.30.15.0/23
- 10.30.16.0/24
- 10.30.16.32/27
- 10.30.16.32/30



34. Refer to the exhibit. The network is configured with RIPv2. However, network administrators notice that communication cannot be successfully completed from one LAN to another. A network administrator issues the show ip route command on the HQ router. Based on the output, what should be done to

correct the problem?

Disable the load balancing feature of RIPv2.

Issue the no auto-summary command for RIPv2.

Replace RIPv2 with EIGRP which supports VLSM.

Make sure that the network statements include the correct subnet mask.

35. Which multicast address does EIGRP use to send hello and updates packets?

224.0.0.5

224.0.0.6

224.0.0.9

224.0.0.10

```
Router# show interfaces serial0/0/0
Serial0/0/0 is administratively down, line protocol is down (disabled)
Hardware is HD64570
MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
Encapsulation HDLC, loopback not set, keepalive set (10 sec)

<output omitted>
```

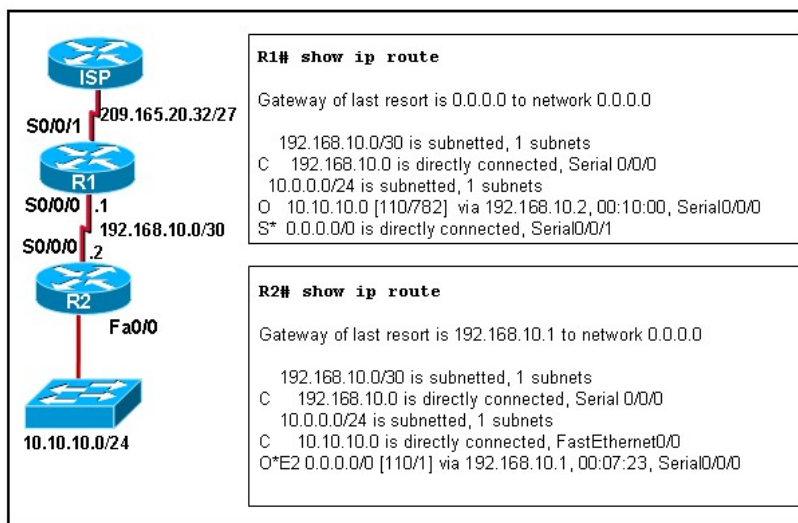
36. Refer to the exhibit. Why is the state of the serial0/0/0 interface administratively down?

An IP address has not been configured on the interface.

The WIC was installed into the incorrect slot on the router.

The default encapsulation on the interface has been modified.

The no shutdown command has not been executed on the interface.



37. Refer to the exhibit. How was the OSPF default gateway entry for R2 determined?

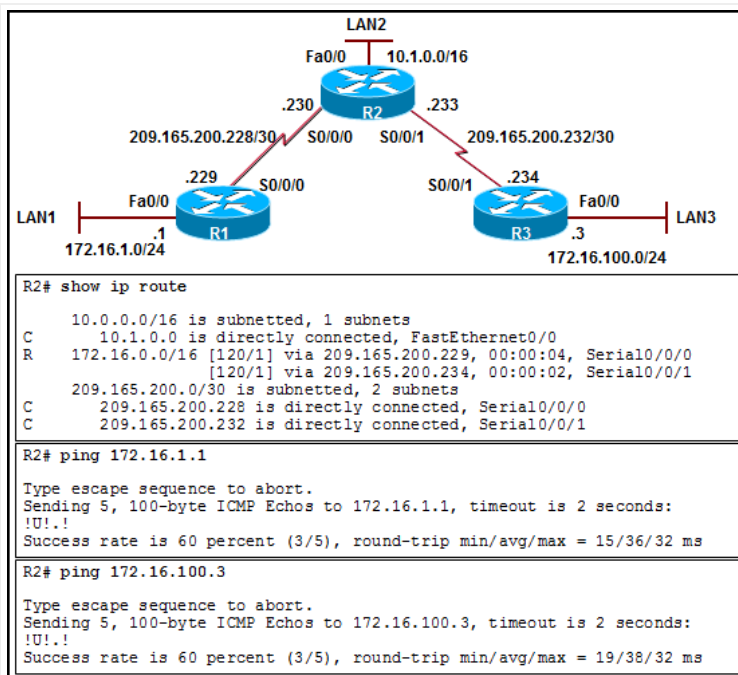
Default routes are automatically injected by OSPF into all advertisements.

A static default gateway route is defined in the configuration of R2.

The default-information originate command is applied on R1.

The ISP defines the gateway of last resort and automatically passes it to R1 and R2.

The ip default-gateway command is applied on R2.



38. Refer to the exhibit. RIPv1 has been properly configured on all routers in the network. However, users on LAN2 have intermittent connectivity with the users on LAN1 and LAN3. What is the cause of the problem?

Both LAN networks are separated from router R2 with a variably subnetted Class C network 209.165.200.0/30.

Neither router R1 nor router R3 has a static route configured that points to the variably subnetted 172.16.0.0/24 networks.

Both routers R1 and R3 are sending the summarized 172.16.0.0/16 network to R2 in their RIPv1 routing updates.

Both networks 172.16.1.0/24 and 172.16.100.0/24 are configured with a subnet mask different from the default classful mask.

39. Which default EIGRP configuration must be modified to allow an EIGRP router to advertise subnets that are configured with VLSM?

split horizon

metric K values

autosummarization

hello and dead intervals

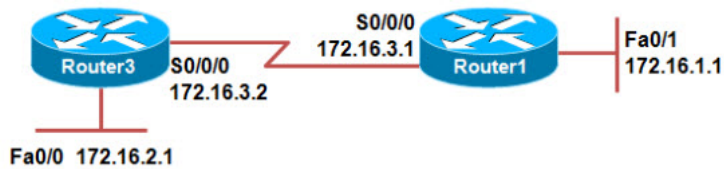
40. What is a successor for a destination network in an EIGRP network?

the next hop on a backup route with the largest feasible distance to the destination

the next hop on a backup route with the smallest feasible distance to the destination

the next hop on the primary route with the largest feasible distance to the destination

the next hop on the primary route with the smallest feasible distance to the destination



```
R3# show ip route
<output omitted>
Gateway of last resort is 0.0.0.0 to network 0.0.0.0

    172.16.0.0/16 is variably subnetted, 4 subnets, 3 masks
D       172.16.0.0/16 is a summary, 00:20:29, Null0
D       172.16.1.0/24 [90/2297856] via 172.16.3.1, 00:13:56, Serial0/0/0
C       172.16.2.0/24 is directly connected, FastEthernet0/0
C       172.16.3.0/30 is directly connected, Serial0/0/0
S*    0.0.0.0/0 is directly connected, Serial0/0/0
```

41. Refer to the exhibit. Which route will be removed from the routing table if manual EIGRP summarization is disabled on the Serial0/0/0 interface of Router3?

- 0.0.0.0/0
- 172.16.0.0/16**
- 172.16.1.0/24
- 172.16.3.0/30

42. Which port can be used for initial router configuration?

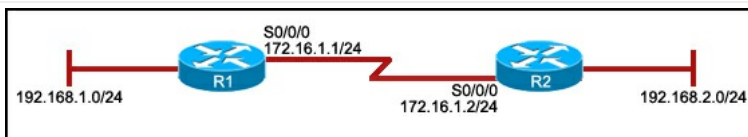
- AUX
- vtty 0
- so/o/o
- console**

43. Which two link-state routing protocol challenges does OSPF resolve through the election of a DR? (Choose two.)

- the extensive flooding of LSAs throughout the OSPF area**
- the excessive adjacencies when the number of routers increases**
- the requirement for link-state database updates to be propagated between OSPF areas
- the heavy CPU load that is imposed because each router must compute shortest paths by using the SPF algorithm
- the requirement for each router to build a topological database of the internetwork to determine the shortest paths between networks

44. A routing table shows an EIGRP route to 192.168.1.0/24 with a metric of 301440. What other term also describes this EIGRP metric value?

- feasible distance**
- reported distance
- feasible successor
- feasibility condition



45. Refer to the exhibit. The network administrator has run the following command on R1.

R1(config)# ip route 192.168.2.0 255.255.255.0 172.16.1.2

What is the result of running this command?

- Traffic for network 192.168.2.0 is forwarded to 172.16.1.2.**
- This route is automatically propagated throughout the entire network.
- Traffic for all networks is forwarded to 172.16.1.2.
- The command invokes a dynamic routing protocol for 192.168.2.0.

```
Router1# show ip eigrp topology all-links
-output omitted-

P 192.168.10.0/24, 1 successors, FD is 2169856, serno 3
  via Summary (2169856/0), Null0
  via 172.16.3.2 (41024000/3011840), Serial0/0/0
P 192.168.10.4/30, 1 successors, FD is 2169856, serno 1
  via Connected, Serial0/0/1
P 192.168.1.0/24, 1 successors, FD is 2172416, serno 5
  via 192.168.10.6 (2172416/28160), Serial0/0/1
  via 172.16.3.2 (41026560/3014400), Serial0/0/0
```

46. Refer to the exhibit. What will happen if interface Serial0/0/1 goes down on Router1?

The Dijkstra algorithm will calculate the feasible successor.

DUAL will query neighbors for a route to network 192.168.1.0.

Neighbor 172.16.3.2 will be promoted to the feasible successor.

Traffic destined to the 192.168.1.0 network will be dropped immediately due to lack of a feasible successor.

```
R1(config)# line console 0
R1(config-line)# password Cisco001
R1(config-line)# login
R1(config-line)# exit
R1(config)# enable password Cisco123
R1(config)# enable secret Cisco789
R1(config)# line vty 0 4
R1(config-line)# password Cisco901
R1(config-line)# login
R1(config-line)# exit
```

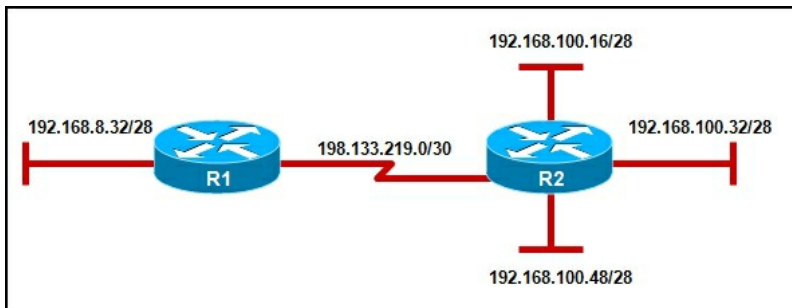
47. Refer to the exhibit. A network administrator is accessing router R1 from the console port. Once the administrator is connected to the router, which password should the administrator enter at the R1> prompt to access the privileged EXEC mode?

Cisco001

Cisco123

Cisco789

Cisco901



48. Refer to the exhibit. Which option will provide the configuration that is needed for router R1 to dynamically learn routes to the 192.168.100.16/28, 192.168.100.32/28, and 192.168.100.48/28 subnetworks?

with static routes

with a routed protocol

with a routing protocol

with directly connected routes

```

Router#show version
Cisco IOS Software, 1841 Software (C1841-ADVIPSERVICESK9-M), Version 12.4(20)T1, RELEASE SOFTWARE (fc3)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2008 by Cisco Systems, Inc.
Compiled Wed 24-Sep-08 12:44 by prod_rel_team

ROM: System Bootstrap, Version 12.4(13r)T, RELEASE SOFTWARE (fc1)

Router uptime is 2 minutes
System returned to ROM by power-on
System image file is "flash:c1841-advipservicesk9-mz.124-20.T1.bin"

<output omitted>

Cisco 1841 (revision 7.0) with 119808K/11264K bytes of memory.
Processor board ID FHK131221SR
2 FastEthernet interfaces
2 Serial(sync/async) interfaces
1 Virtual Private Network (VPN) Module
DRAM configuration is 64 bits wide with parity disabled.
191K bytes of NVRAM.
990864K bytes of ATA CompactFlash (Read/Write)

Configuration register is 0x2102

Router#

```

49. Refer to the exhibit. What will happen when the router reloads?

It will boot into ROMMON mode.

It will ignore the start-up configuration file.

It will look for the start-up configuration file on the TFTP server.

It will attempt to load the start-up configuration file that is stored in NVRAM.

50. On a router, which actions can be performed in user mode?

perform password recovery

make global configuration changes

view status of various router functions

make changes to a specified interface

Set-2

1. Which of the following are required when adding a network to the OSPF routing process [configuration](#)? (Choose three.)

network address

loopback address

autonomous system number

subnet mask

wildcard mask

area ID

2. Which of the following are primary functions of a router? (Choose two.)

packet switching

microsegmentation

[domain name](#) resolution

path selection

flow control

```

192.0.2.0/24 is variably subnetted, 9 subnets, 3 masks
C   192.0.2.64/28 is directly connected, Loopback1
C   192.0.2.32/28 is directly connected, Ethernet0
C   192.0.2.48/28 is directly connected, Loopback0
O   192.0.2.236/30 [110/256] via 192.0.2.233, 00:35:36, Serial0
C   192.0.2.232/30 is directly connected, Serial0
O   192.0.2.245/32 [110/192] via 192.0.2.233, 00:35:36, Serial0
<output omitted>

```

3. Refer to the routing table shown in the exhibit. What is the meaning of the highlighted value 192?

It is the value assigned by the Dijkstra algorithm that designates the number of hops in the network.

It is the value used by the DUAL algorithm to determine the bandwidth for [the link](#).

It is the metric, which is cost.

It is the [administrative](#) distance.

4. Which three statements are true regarding the encapsulation and de-encapsulation of packets when traveling through a router? (Choose three.)

The router modifies the TTL field, decrementing it by one.

The router changes the source IP to the IP of the exit interface.

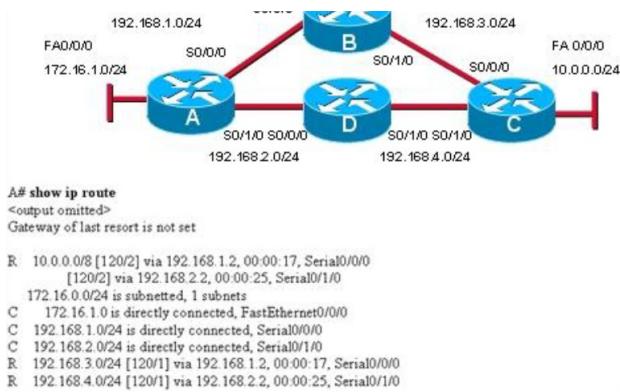
The router maintains the same source and [destination](#) IP.

The router changes the source physical address to the physical address of the exit interface.

The router changes the destination IP to the IP of the exit interface.

The router sends the packet out all other interfaces, besides the one it entered the router on.





Refer to the exhibit. Which path will traffic from the 172.16.1.0/24 network take to get to the 10.0.0.0/24 network?

ADC

ABC

It will load balance the traffic between ADC and ABC

It will send the traffic via ABC, and will use ADC as a backup path only when ABC fails.

5. What is the purpose of the TTL field within an IP packet header?

clears an unreachable route from the routing table after the invalid timer expires

prevents regular update messages from inappropriately reinstating a route that may have gone bad

removes an unreachable route from the routing table after the flush timer expires

limits the period of time or number of hops a packet can traverse through the network before it should be discarded

used to mark the route as unreachable in a routing update that is sent to other routers

```

<output omitted>
172.16.0.0/24 is subnetted, 4 subnets
S 172.16.4.0 is directly connected, Serial0/0/1
R 172.16.1.0 [120/1] via 172.16.2.1, 00:00:08, Serial0/0/0
C 172.16.2.0 is directly connected, Serial0/0/0
C 172.16.3.0 is directly connected, FastEthernet0/0
10.0.0.0/16 is subnetted, 1 subnets
S 10.1.0.0 is directly connected, Serial0/0/1
C 192.168.1.0/24 is directly connected, Serial0/0/1
S 192.168.100.0/24 is directly connected, Serial0/0/1
<output omitted>
  
```

6. Refer to the exhibit. How many routes are both level 1 and qualify for use as an ultimate route?

1

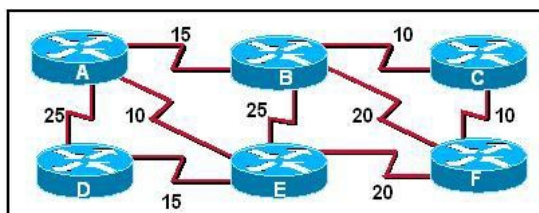
2

3

4

5

6



7. Refer to the exhibit. Cost for each path are shown. If all routers are configured to use OSPF, what would be the path of a packet sent from Router C to Router D if Router A was down?

C-B-E-D

C-B-A-D

C-F-E-D

C-F-B-A-D

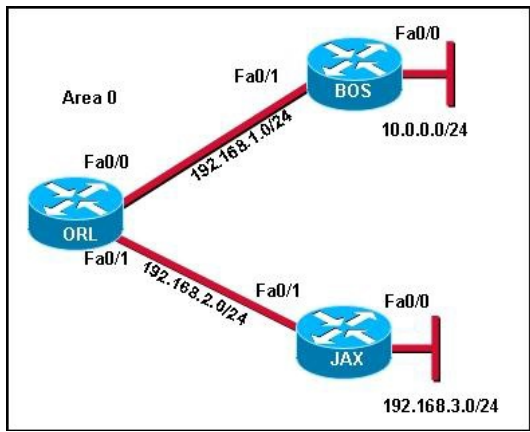
C-F-E-A-D

```

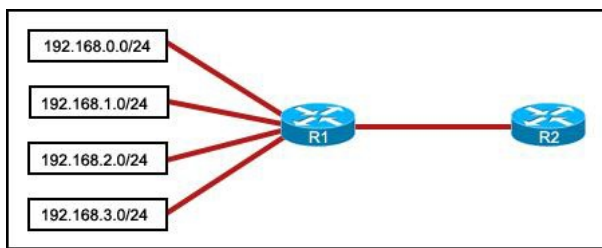
Router1# show interfaces serial 0/1/0
Serial0/1/0 is up, line protocol is up (connected)
Internet address is 192.168.0.2/30
MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec, rely 255/255, load 1/255
Encapsulation HDLC, loopback not set, keepalive set (10 sec)
<output omitted>

Router2# show interfaces serial 0/1/0
Serial0/1/0 is up, line protocol is up (connected)
Internet address is 192.168.0.6/30
MTU 1500 bytes, BW 64000 Kbit, DLY 20000 usec, rely 255/255, load 1/255
Encapsulation HDLC, loopback not set, keepalive set (10 sec)
<output omitted>
  
```

8. Refer to the exhibit. Routers 1 and 2 are directly connected over a serial link. Pings are failing between the two routers. What change by the administrator will correct the problem?
 Set the encapsulation on both routers to PPP.
 Decrease the bandwidth on Serial 0/1/0 on router 2 to 1544.
 Change the cable that connects the routers to a crossover cable.
 Change the IP address on Serial 0/1/0 on router 2 to 192.168.0.1/30.

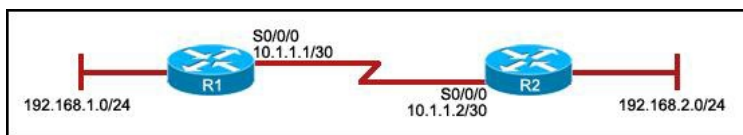


9. Refer to the exhibit. A network administrator is trying to determine why router JAX has no OSPF routes in its routing table. All routers are configured for OSPF area 0. From the JAX router, the administrator is able to ping its connected interfaces and the Fa0/1 interface of the ORL router but no other router interfaces. What is a logical step that the network administrator should take to troubleshoot the problem?
 Reboot the routers.
 Change the OSPF process ID on all of the routers to 0.
 Check to see if the cable is loose between ORL and JAX.
 Check to see if CDP packets are passing between the routers.
 Use **show** and debug commands to determine if hellos are propagating



10. Refer to the exhibit. Which summarization should R1 use to advertise its networks to R2?
 192.168.1.0/24
 192.168.0.0/24
 192.168.0.0/22
 192.168.1.0/22

11. A router boots and enters setup mode. What is the reason for this?
 The IOS image is corrupt.
 Cisco IOS is missing from flash memory.
 The configuration file is missing from NVRAM.
 The POST process has detected hardware failure.



12. Refer to the exhibit. R1 is configured properly for a single area OSPF, and R2 has been recently installed in the network. Which set of commands is required to configure a single area OSPF for the networks that are connected to R2?
 R2(config)# router ospf 1
 R2(config-router)# network 192.168.2.0 0.0.0.255 area 0
 R2(config-router)# network 10.1.1.0 0.0.0.3 area 0
 R2(config)# router ospf 1 R2(config-router)# network 192.168.2.0 0.0.0.255 area 0 R2(config)# router ospf 2 R2(config-router)# network 10.1.1.0 0.0.0.3 area 0
 R2(config)# router ospf 1 R2(config-router)# network 192.168.2.0 0.0.0.255 area 0 R2(config-router)# network 10.1.1.0 0.0.0.3 area 1
 R2(config)# router ospf 1 R2(config-router)# network 192.168.2.0 0.0.0.255 area 0 R2(config-router)# network 10.0.0.0 0.0.0.3 area 1

```
R2# show ip eigrp topology
IP-EIGRP Topology Table for AS(80)/ID(192.168.101.1)
```

Codes: P - Passive, A - Active, U - Update, Q - Query, R - Reply,

```

r - reply Status, s - sia Status

P 192.168.1.0/30, 1 successors, FD is 128256
  Via Connected, Serial0/0/0
R2#

R1# show ip eigrp topology
IP-EIGRP Topology Table for AS(50)/ID(192.168.100.5)

Codes: P -
Passive, A - Active, U - Update, Q - Query, R - Reply,
r - reply Status, s - sia Status

P 192.168.1.0/30, 1 successors, FD is 20512000
  via Connected, Serial0/0/0

```

13. Refer to the exhibit. Routers R1 and R2 are directly connected via their serial interfaces and are both running the EIGRP routing protocol. R1 and R2 can ping the directly connected serial interface of their neighbor, but they cannot form an EIGRP neighbor adjacency.

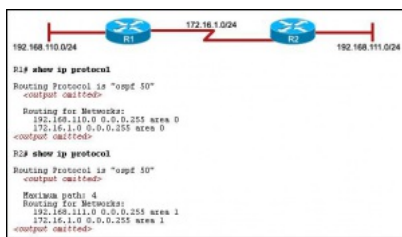
What action should be taken to solve this problem?

Enable the serial interfaces of both routers.

Configure EIGRP to send periodic updates.

Configure the same hello interval between the routers.

Configure both routers with the same EIGRP process ID



14. Refer to the exhibit. The hosts that are connected to R2 are unable to ping the hosts that are connected to R1. How can this problem be resolved?

Configure the router ID on both routers.

Configure the R2 router interfaces for area 0.

Configure a loopback interface on both routers.

Configure the proper subnet masks on the router interfaces.

15. In a [lab test](#) environment, a router has learned about network 172.16.1.0 through four different dynamic routing processes. Which route will be used to reach this network?

D 172.16.1.0/24 [90/2195456] via 192.168.200.1, 00:00:09, Serial0/0/0

O 172.16.1.0/24 [110/1012] via 192.168.200.1, 00:00:22, Serial0/0/0

R 172.16.1.0/24 [120/1] via 192.168.200.1, 00:00:17, Serial0/0/0

I 172.16.1.0/24 [100/1192] via 192.168.200.1, 00:00:09, Serial0/0/0

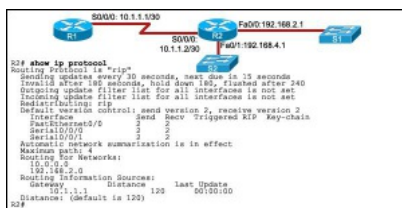
16. Which statement is true about the metrics used by routing protocols?

A metric is a value used by a particular routing protocol to compare paths to remote networks.

A common metric is used by all routing protocols.

The metric with the highest value is installed in the routing table.

The router may use only one parameter at a time to calculate the metric



17. Refer to the exhibit. Both routers are using the RIPv2 routing protocol and static routes are undefined. R1 can ping

192.168.2.1 and 10.1.1.2, but is unable to ping 192.168.4.1.

What is the reason for the ping failure?

The serial interface between two routers is down.

R2 is not forwarding the routing updates.

The 192.168.4.0 network is not included in the RIP configuration of R2.

RIPv1 needs to be configured.

18. Which two statements are true about the EIGRP successor route? (Choose two.)

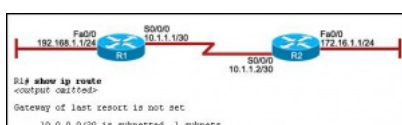
It is saved in the topology table for use if the primary route fails.

It may be backed up by a feasible successor route.

It is used by EIGRP to forward traffic to the destination.

It is flagged as active in the routing table.

After the discovery process has occurred, the successor route is stored in the neighbor table



```

C 10.1.1.0 is directly connected, Serial0/0/0
C 192.168.1.0/24 is directly connected, FastEthernet0/0
R1#

```

19. Refer to the exhibit. Hosts on the 192.168.1.0 network cannot communicate with hosts on the 172.16.1.1 network. The network administrator has run the `show ip route` command on R1. What could be the cause of this problem?

The FastEthernet interface on R1 is disabled.

Autosummarization is enabled on R1.

The serial interface S0/0/0 of R1 is administratively down.

No static route or routing protocol is configured.

20. Which statement correctly describes a feature of RIP?

RIP is a link-state routing protocol.

RIP uses only one metric—hop count—for path selection.

Advertised routes with hop counts greater than 10 are unreachable.

Messages are broadcast every 10 seconds



21. Refer to the exhibit. Which two statements are true based on the exhibited output? (Choose two.)

All routes are stable.

Each route has one feasible successor.

The serial interface between the two routers is down.

The administrative distance of EIGRP has been set to 50.

The `show ip eigrp topology` command has been run on R1.

22. A network administrator is analyzing routing update behavior on a network that has both EIGRP and OSPF

configured on all routers. Both protocols appear in the output of `show ip protocols`. However, only EIGRP internal

routes appear in the routing tables. Which statement correctly explains the scenario?

The OSPF protocol has a higher cost than EIGRP.

The EIGRP protocol has a lower metric than OSPF.

The EIGRP protocol was configured first on the router.

The EIGRP protocol has a lower administrative distance than OSPF

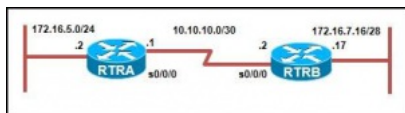
23. Which prompt is used to allow a user to change the IP address of an interface on a router?

Router>

Router#

Router(config)#

Router(config-if)#



24. Refer to the exhibit. Routers RTRA and RTRB are running OSPF. What entry does RTRA add in the routing table

when Serial 0/0/0 receives an update about the network that is attached to RTRB?

O 172.16.7.0/30 [110/51] via 10.10.10.2, 00:00:25, Serial0/0/0

O 172.16.7.16/28 [110/51] via 10.10.10.2, 00:00:25, Serial0/0/0

O 172.16.7.0/24 [110/51] via 10.10.10.2, 00:00:25, Serial0/0/0

O 172.16.0.0/16 [110/51] via 10.10.10.2, 00:00:25, Serial0/0/0

25. Which additional piece of information is included in the updates of classless routing protocols to support the use of VLSM and discontinuous networks?

metric

network mask

neighbor router ID

administrative distance

26. Because of a topology change, the next hop IP address in the current static route must be reconfigured. How can a static route entry be altered to accommodate a topology change?

Keep the existing static route and configure a new static route with the correct next hop IP address.

Negate the existing static route and configure a new static route with the correct next hop IP address.

Do nothing. The existing static route will automatically update the next hop entry with the new IP address.

Keep the existing static route, reload the router, and configure a new static route with the correct next hop IP address

27. Which router mode is accessed by entering the `enable` command?

user EXEC

privileged EXEC

global configuration

```
R1(config)# interface FastEthernet0/0
R1(config-if)# description Engineering Department
R1(config-if)# ip address 10.1.1.1 255.255.255.0
R1(config-if)# no shutdown
R1(config-if)# interface FastEthernet0/1
R1(config-if)# ip address 10.1.1.2 255.255.255.0
R1(config-if)# no shutdown
```

28. Refer to the exhibit. An administrator is attempting to configure a router by copying and pasting the commands that are shown in the exhibit. However, only one of the FastEthernet interfaces is coming up. What is the problem?

Both interfaces are in the same IP subnet.

FastEthernet0/1 does not have a description.

There can be only one FastEthernet interface enabled on a router at one time.

The administrator did not exit to global configuration mode before configuring FastEthernet0/1

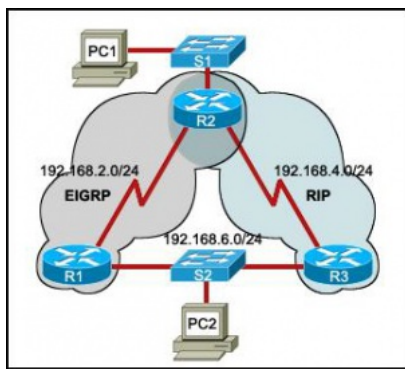
29. In an examination of two OSPF routers that fail to exchange information, it is determined that they have not become OSPF neighbors. Which two configuration values must match for the OSPF routers to become neighbors?

neighbor ID and router ID

dead time and hello time

OSPF area and neighbor ID

OSPF area and interface priority



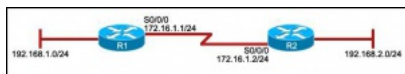
30. Refer to the exhibit. Routers R1 and R3 use different routing protocols with default administrative distance values. All devices are properly configured and the destination network is advertised by both protocols. Which path will be used to transmit the data packets from PC1 to PC2?

The packets will travel via R2-R1.

The packets will travel via R2-R3.

The traffic will be load-balanced between two paths — via R2-R1 and via R2-R3.

The packets will travel via R2-R3, and the other path via R2-R1 will be retained as the backup path



31. Refer to the exhibit. The network administrator has run the following command on R1. R1(config)# ip route 192.168.2.0 255.255.255.0 172.16.1.2 What is the result of running this command?

Traffic for network 192.168.2.0 is forwarded to 172.16.1.2.

This route is automatically propagated throughout the entire network.

Traffic for all networks is forwarded to 172.16.1.2.

The command invokes a dynamic routing protocol for 192.168.2.0

32. Why is fast convergence desirable in networks that use dynamic routing protocols?

Hosts are unable to access their gateway until the network is converged.

Routers will not allow packets to be forwarded until the network is converged.

Routers may make incorrect forwarding decisions until the network has converged.

Routers will not allow configuration changes to be made until the network has converged

33. Which two statements about routing protocols are accurate? (Choose two.)

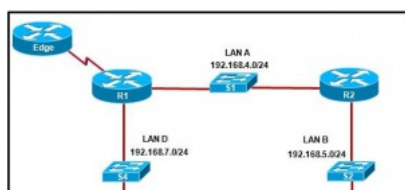
OSPF supports VLSM.

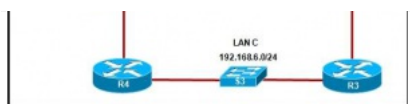
RIPv1 supports VLSM.

RIPv2 does not have a hop count limit.

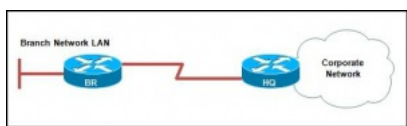
EIGRP supports discontinuous network designs.

RIPv2 does not support discontinuous network designs

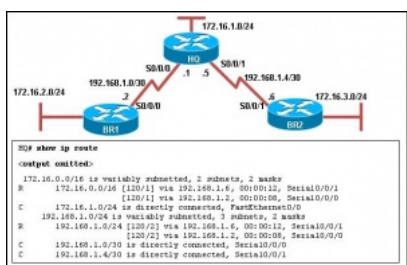




34. Refer to the exhibit. If the EIGRP routing protocol is used throughout the network, which IP address and mask prefix should be sent by router R1 to the Edge router as a result of manual summarization of LANs A, B, C, and D?
- 192.168.4.0/20
 - 192.168.4.0/22
 - 192.168.4.0/24
 - 192.168.4.0/26



35. Refer to the exhibit. Which solution provides the most efficient use of router resources for forwarding traffic between BR and HQ?
- RIP
 - RIPV2
 - EIGRP
 - static routes

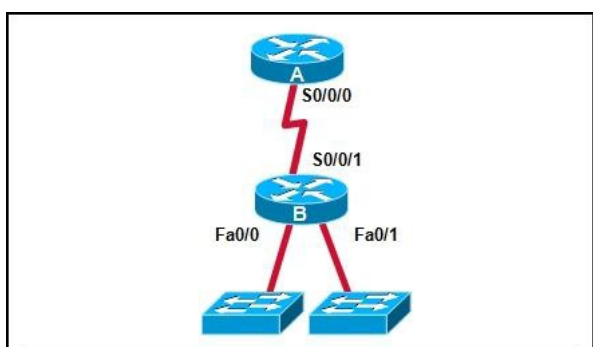


36. Refer to the exhibit. The network is configured with RIPv2. However, network administrators notice that communication cannot be successfully completed from one LAN to another. A network administrator issues the show ip route command on the HQ router. Based on the output, what should be done to correct the problem?
- Disable the load balancing feature of RIPv2.
 - Issue the no auto-summary command for RIPv2.
 - Replace RIPv2 with EIGRP which supports VLSM.
 - Make sure that the network statements include the correct subnet mask

37. Which protocol is used by EIGRP to deliver and receive update packets?
- FTP
 - RTP
 - TCP
 - TFTP
 - UDP

38. Which multicast address does EIGRP use to send hello and updates packets?
- 224.0.0.5
 - 224.0.0.6
 - 224.0.0.9
 - 224.0.0.10

39. A network administrator is using an application that is monitoring packets on the network and sees an EIGRP update packet. What is the purpose of the update packet?
- The packet is sent to discover neighbors within the EIGRP network.
 - The packet is sent to search for network devices within an EIGRP network.
 - The packet is used to propagate routing information within the EIGRP network.
 - The packet is used to send an unreachable reply to another router within the EIGRP network.
 - The packet is used to notify all routers that EIGRP has failed on one of the routers within the EIGRP network



```

B(config)# interface serial 0/0/1
B(config-if)# ip address 10.1.1.1 255.255.255.252
B(config)# interface FastEthernet 0/0
B(config-if)# ip address 10.10.1.1 255.255.255.0
B(config)# interface FastEthernet 0/1
B(config-if)# ip address 10.20.1.1 255.255.255.0

```

40. Refer to the exhibit. What OSPF network statements are required for the router B to advertise the three networks that are attached?

router ospf 1 network 10.0.0.0 0.0.0.255 area 0

router ospf 1 network 10.1.1.0 0.3.255.255 area 0 network 10.10.1.0 0.255.255.255 area 0 network 10.20.1.0 0.255.255.255 area 0

router ospf 1 network 10.1.1.0 0.0.0.3 area 0 network 10.10.1.0 0.0.255.255 area 0 network 10.20.1.0 0.0.255.255 area 0

router ospf 1 network 10.1.1.0 0.0.0.3 area 0 network 10.10.1.0 0.0.0.255 area 0 network 10.20.1.0 0.0.0.255 area 0

```

Router# show interfaces serial0/0/0
Serial0/0/0 is administratively down, line protocol is down (disabled)
Hardware is HD64570
MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
Encapsulation HDLC, loopback not set, keepalive set (10 sec)

<output omitted>

```

41. Refer to the exhibit. Why is the state of the serial0/0/0 interface administratively down?

An IP address has not been configured on the interface.

The WIC was installed into the incorrect slot on the router.

The default encapsulation on the interface has been modified.

The no shutdown command has not been executed on the interface

42. On a router, which three components are stored in RAM? (Choose three.)

POST code

the routing table

the running-configuration

the start-up configuration

the bootstrap instructions

a copy of the operating system



```

RouterA# show run

<output omitted>

interface Serial0/0/1
ip address 172.16.10.1 255.255.255.0
ip bandwidth-percent eigrp 100 75
ip hello-interval eigrp 100 3
!
router eigrp 100
network 10.0.0.0
network 172.16.0.0
network 192.168.1.0
auto-summary

<output omitted>

```

```

RouterB# show run

<output omitted>

interface Serial0/0/1
ip address 172.16.10.2 255.255.255.0
ip hello-interval eigrp 10 2
!
router eigrp 10
network 172.16.0.0
network 192.168.2.0
auto-summary

<output omitted>

```

43. Refer to the exhibit. RouterA and RouterB cannot successfully exchange EIGRP routes. What is the problem?

The hello intervals do not match.

The autonomous system numbers do not match.

The no auto-summary command is missing from both routers.

The ip bandwidth-percent command is missing from RouterB

```

RTRA(config)# interface Serial0/0/1
RTRA(config-if)# bandwidth 64
RTRA(config-if)# ip address 172.16.10.1 255.255.255.0
RTRA(config-if)# ip bandwidth-percent eigrp 50 10

```

44. Refer to the exhibit. What is the purpose of the ip bandwidth-percent eigrp 50 10 command?

to limit the bandwidth EIGRP packets can use to 6.4 kb/s

to limit the bandwidth EIGRP packets can use to 10 kb/s

to limit the bandwidth EIGRP packets can use to 32 kb/s

to limit the bandwidth EIGRP packets can use to 50 kb/s

45. A network administrator adds the default-information originate command to the configuration of a router that uses RIP as the routing protocol. What will result from adding this command?

The router will be reset to the default factory information.

The router will not forward routing information that is learned from other routers.

The router will propagate a static default route in its RIP updates, if one is present.

The router will only forward packets that originate on directly connected networks

46. A network technician is configuring a Cisco 2811 router. The technician types conf at the privileged level command prompt and presses the TAB key. What action will the router take?

It will revert to the user mode.

It will perform an auto-complete function.

It will go into the global configuration mode.

It will give an error message that indicates a bad command was entered

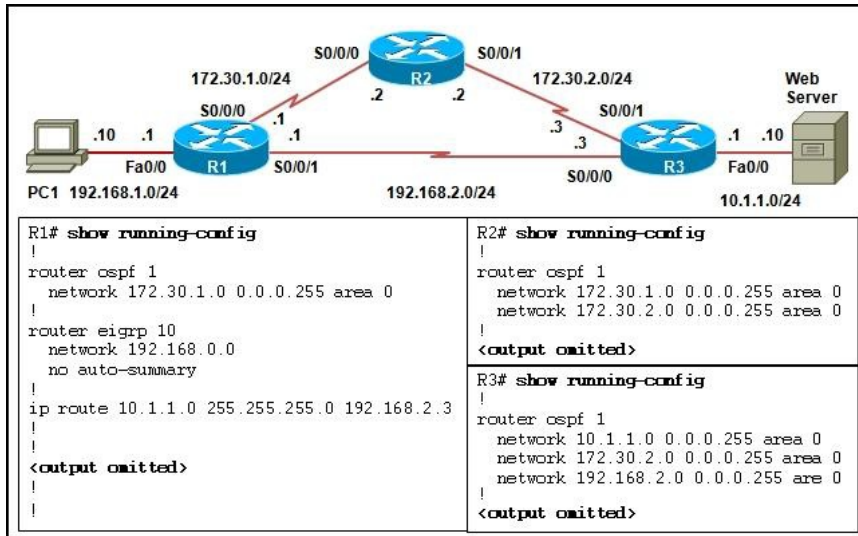
47. What is a function of the console port on a router?

It is used to manage the router.

It is used for packet receiving and forwarding.

It is used to interconnect various types of LANs.

It is used to interconnect a variety of serial links including T1, DSL, and ISDN



48. Refer to the exhibit. Which route will be installed in the routing table on R1 to forward traffic from PC1 to the web server?

the static route

the route learned via OSPF

the route learned via EIGRP

both routes learned via OSPF and EIGRP

```
Router# config terminal
Router(config)# enable password cisco
Router(config)# enable secret please
Router(config)# line console 0
Router(config-line)# password letmein
Router(config-line)# login
Router(config-line)# line vty 0 4
Router(config-line)# password access
Router(config-line)# login
```

49. Refer to the exhibit. After the commands are entered, which password will be required to establish a Telnet session

with the router?

cisco

letmein

please

access

18. Which two statements are true about the EIGRP successor route? (Choose two.)

It may be backed up by a feasible successor route.

It is used by EIGRP to forward traffic to the destination.

```

192.0.2.0/24 is variably subnetted, 9 subnets, 3 masks
C   192.0.2.64/28 is directly connected, Loopback1
C   192.0.2.32/28 is directly connected, Ethernet0
C   192.0.2.48/28 is directly connected, Loopback0
O   192.0.2.236/30 [110/256] via 192.0.2.233, 00:35:36, Serial0
C   192.0.2.232/30 is directly connected, Serial0
O   192.0.2.245/32 [110/192] via 192.0.2.233, 00:35:36, Serial0
<output omitted>

```

1. Refer to the routing table shown in the exhibit. What is the meaning of the highlighted value 192?

It is the value assigned by the Dijkstra algorithm that designates the number of hops in the network.

It is the value used by the DUAL algorithm to determine the bandwidth for the link.

It is the metric, which is cost.

It is the administrative distance.

2. What is the purpose of the TTL field within an IP packet header?

clears an unreachable route from the routing table after the invalid timer expires

prevents regular update messages from inappropriately reinstating a route that may have gone bad

removes an unreachable route from the routing table after the flush timer expires

limits the period of time or number of hops a packet can traverse through the network before it should be discarded

used to mark the route as unreachable in a routing update that is sent to other routers

3. When would the network administrator use the ip bandwidth-percent *eigrpas-number percent* command?

when there is a low bandwidth connection

when the connection is on a shared medium

when the connection is serial instead of Ethernet

when the link is always busy

4. What is the function of the OSPF LSU packet?

used to confirm receipt of certain types of OSPF packets

used to establish and maintain adjacency with other OSPF routers

used to request more information about any entry in the BDR

used to announce new OSPF information and to reply to certain types of requests

5. Two routers need to be configured within a single OSPF area. Which two components need to be configured on both routers to achieve this? (Choose two.)

the same process ID

the same area ID

network addresses and wildcard masks

the same router ID

the same loop back address

6. Which routing protocol maintains a topology table separate from the routing table?

IGRP

RIPv1

RIPv2

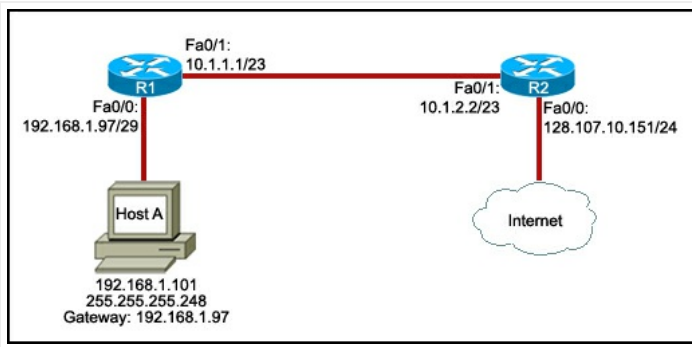
EIGRP

7. A router has learned two equal cost paths to a remote network via the EIGRP and RIP protocols. Both protocols are using their default configurations. Which path to the remote network will be installed in the routing table?

the path learned via EIGRP the path learned via RIP

the path with the highest metric value

both paths with [load balancing](#)



8. Refer to the exhibit. Host A is unable to access the Internet. What is the reason for this?

The IP address of host A is incorrect.

The default gateway of host A is incorrect.

The Fa0/1 interfaces of the two routers are configured for different subnets.

The subnet mask for the Fa0/0 interface of R1 is incorrect.

9. Which two locations can be the source of the [Cisco IOS](#) that is used by a router during the bootup process? (Choose two.)

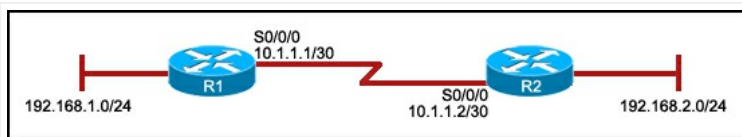
flash memory

RAM

NVRAM

TFTP server

configuration register



10. Refer to the exhibit. R1 is configured properly for a single area OSPF, and R2 has been recently installed in the network. Which set of commands is required to configure a single area OSPF for the networks that are connected to R2?

R2(config)# router ospf 1

R2(config-router)# network 192.168.2.0 0.0.0.255 area 0

R2(config-router)# network 10.1.1.0 0.0.0.3 area 0 R2(config)# router ospf 1

R2(config-router)# network 192.168.2.0 0.0.0.255 area 0

R2(config)# router ospf 2

R2(config-router)# network 10.1.1.0 0.0.0.3 area 0

R2(config)# router ospf 1

R2(config-router)# network 192.168.2.0 0.0.0.255 area 0

R2(config-router)# network 10.1.1.0 0.0.0.3 area 1

R2(config)# router ospf 1

R2(config-router)# network 192.168.2.0 0.0.0.255 area 0

R2(config-router)# network 10.0.0.0 0.0.0.3 area 1

```

R2# show ip eigrp topology
IP-EIGRP Topology Table for AS(80)/ID(192.168.101.1)

Codes: P - Passive, A - Active, U - Update, Q - Query, R - Reply,
       r - reply Status, s - sia Status

P 192.168.1.0/30, 1 successors, FD is 128256
   Via Connected, Serial0/0/0
R2#

R1# show ip eigrp topology
IP-EIGRP Topology Table for AS(50)/ID(192.168.100.5)

Codes: P -
Passive, A - Active, U - Update, Q - Query, R - Reply,
       r - reply Status, s - sia Status

P 192.168.1.0/30, 1 successors, FD is 20512000
   via Connected, Serial0/0/0

```

11. Refer to the exhibit. Routers R1 and R2 are directly connected via their serial interfaces and are both running the EIGRP routing protocol. R1 and R2 can ping the directly connected serial interface of their neighbor, but they cannot form an EIGRP neighbor adjacency.

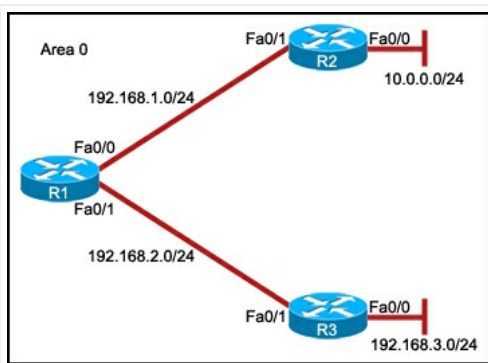
What action should be taken to solve this problem?

Enable the serial interfaces of both routers.

Configure EIGRP to send periodic updates.

Configure the same hello interval between the routers.

Configure both routers with the same EIGRP process ID.

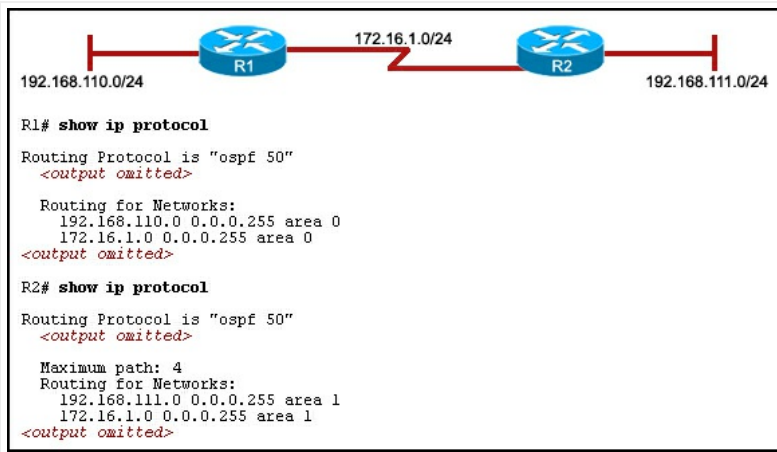


12. Refer to the exhibit. The interfaces of all routers are configured for OSPF area 0. R3 can ping R1, but the two routers are unable to establish a neighbor adjacency. What should the network administrator do to troubleshoot this problem?

Check if the interfaces of the routers are enabled.

Check the hello and dead intervals between the routers. Check the process ID of both routers.

Check if CDP is enabled on all the routers.

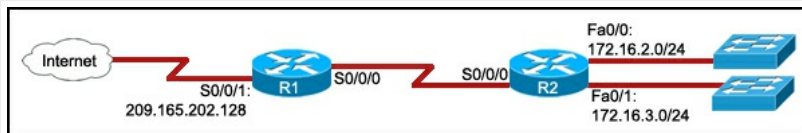


13. Refer to the exhibit. The hosts that are connected to R2 are unable to ping the hosts that are connected to R1. How can this problem be resolved?

Configure the router ID on both routers.

Configure the R2 router interfaces for area 0. Configure a loopback interface on both routers.

Configure the proper subnet masks on the router interfaces.



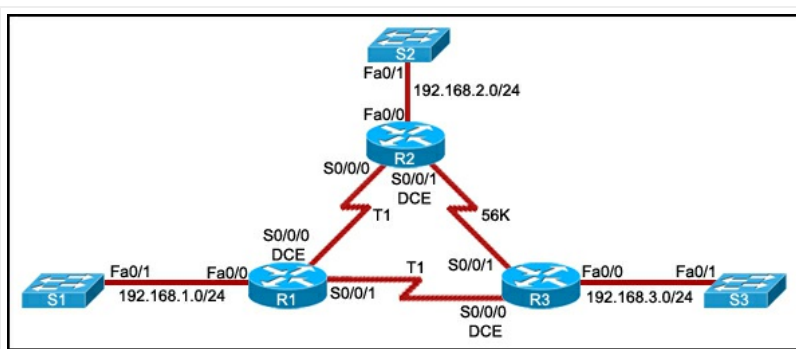
14. Refer to the exhibit. The command `ip route 0.0.0.0 0.0.0.0 S0/0/0` is run on router R2. What are the two results of this command? (Choose two.)

A static route will be updated in the routing table. The traffic from the Internet will be directed to R2.

The traffic from the source network 172.16.0.0/22 will be blocked.

The route will be specified as the default route for all networks not defined in the routing table.

All the broadcasts will be forwarded via the S0/0/0 interface of R2.



15. Refer to the exhibit. All routers are properly configured with default configurations and are running the OSPF routing protocol. The network is fully converged. A host on the 192.168.3.0/24 network is communicating with a host on the 192.168.2.0/24 network.

Which path will be used to transmit the data?

The data will be transmitted via R3-R2.

The data will be transmitted via R3-R1-R2.

The traffic will be load-balanced between two paths — one via R3-R2, and the other via R3-R1-R2.

The data will be transmitted via R3-R2, and the other path via R3-R1-R2 will be retained as the backup path.

16. In a lab test environment, a router has learned about network 172.16.1.0 through four different dynamic routing processes. Which route will be used to reach this network?

D 172.16.1.0/24 [90/2195456] via 192.168.200.1, 00:00:09, Serial0/0/0

172.16.1.0/24 [110/1012] via 192.168.200.1, 00:00:22, Serial0/0/0

R 172.16.1.0/24 [120/1] via 192.168.200.1, 00:00:17, Serial0/0/0

I 172.16.1.0/24 [100/1192] via 192.168.200.1, 00:00:09, Serial0/0/0

17. Which two technologies can be used in distance vector routing protocols to prevent routing loops? (Choose two.)

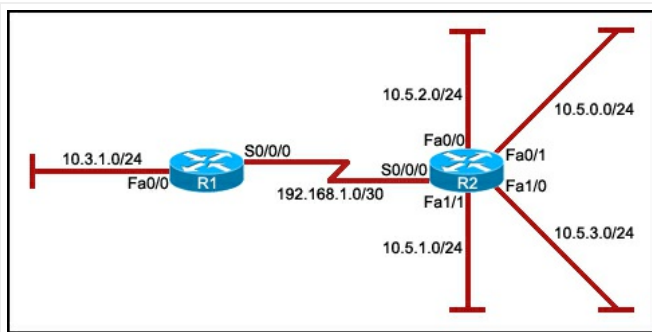
authentication

link-state advertisements

hold-down timers

Spanning Tree Protocol

split horizon



18. Refer to the exhibit. A [network administrator](#) wants to reduce the size of the routing table of R1. Which partial routing table entry in R1 represents the route summary for R2, without including any additional subnets?

10.0.0.0/16 is subnetted, 1 subnets

D 10.5.0.0[90/205891] via 192.168.1.2, So/0/0

10.0.0.0/24 is subnetted, 4 subnets

D 10.5.0.0[90/205198] via 192.168.1.2, So/0/0

10.0.0.0/22 is subnetted, 1 subnets

D 10.5.0.0[90/205901] via 192.168.1.2, So/0/0

10.0.0.0/8 is subnetted, 4 subnets

D 10.5.0.0[90/205001] via 192.168.1.2, So/0/0

```
R1# show ip route
<output omitted>
Gateway of last resort is 0.0.0.0 to network 0.0.0.0
  172.16.0.0/23 is subnetted, 1 subnets
    C    172.16.2.0 is directly connected, FastEthernet0/1
  10.0.0.0/8 is variably subnetted, 3 subnets, 3 masks
    C    10.1.1.8/29 is directly connected, Serial0/0/0
    C    10.1.1.0/30 is directly connected, Serial0/0/1
    C    10.1.1.96/27 is directly connected, Serial0/1/0
    C    192.168.1.0/24 is directly connected, FastEthernet0/0
<output omitted>
```

19. Refer to the exhibit. How many routes are ultimate routes?

3

4

5

7

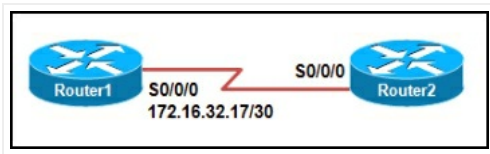
20. Which statement correctly describes a feature of RIP?

RIP is a link-state routing protocol.

RIP uses only one metric—hop count— for path selection.

Advertised routes with hop counts greater than 10 are unreachable.

Messages are broadcast every 10 seconds.



21. Refer to the exhibit. Which combination of IP address and subnet mask can be used on the serial interface of Router2 in order to put the interface in the same network as the serial interface of Router1?

IP 172.16.0.18, subnet mask 255.255.255.0

IP 172.16.32.15, subnet mask 255.255.255.240

IP 172.16.0.18, subnet mask 255.255.255.252

IP 172.16.32.18, subnet mask 255.255.255.252

22. The command `ip route 192.168.2.0 255.255.255.0 172.16.2.2` was entered into the router. After network changes were made, the new next hop for the 192.168.2.0/24 network is 172.16.5.1. What should an administrator do so that the router will use the new next hop to reach the 192.168.2.0 network?

Enter the command **`clear ip route *`**.

Lower the administrative distance for the new path to ensure that it is used first.

Negate the original command and enter a new static route with the new next hop.

Nothing. The router will learn of the new next hop and automatically update the route table.

23. A network administrator is in charge of two separate networks that share a single building. What device will be required to connect the two networks and add a common connection to the Internet that can be shared?

hub

router

access point

Ethernet switch

24. A network administrator must use the subnet 172.16.128.0/18 to create 6 additional subnets each containing up to 2000 hosts for local LANs. Which subnet mask should the administrator use to create the new subnets?

255.255.224.0

255.255.240.0

255.255.248.0

255.255.252.0

25. When connecting two devices, which situation would normally require the use of a crossover cable?

connecting a host to a switch

connecting a switch to a router

connecting a switch to a switch

connecting a host to a router console port

26. Which router mode is accessed by entering the enable command?

user EXEC

privileged EXECglobal configuration

interface configuration

```
hostname Router1
!
enable password C1$c0R0x!
!
<output omitted>
!
interface FastEthernet0/0
ip address 10.1.1.1 255.255.255.0
duplex auto
speed auto
!
line con 0
password $ecUr1Ty!
line vty 0 4
login
!
!
end
```

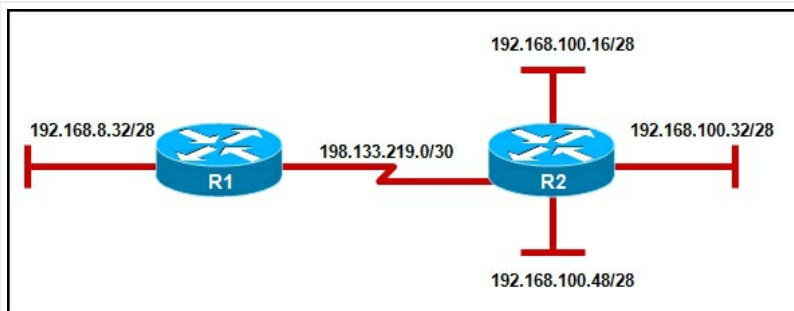
27. Refer to the exhibit. Based on the partial output in the exhibit, why can users establish a console connection to this router without entering a password?

The login command was not entered on the console line.

The enable password should be an enable secret password.

No username and password combination has been configured.

Console connections cannot be configured to require users to provide passwords.



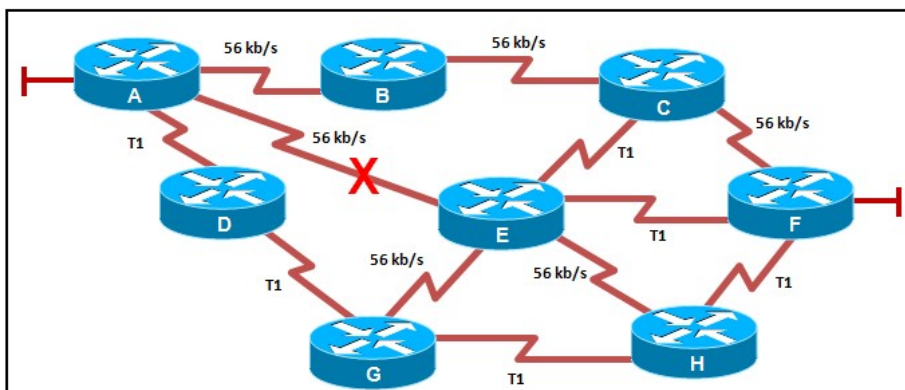
28. Refer to the exhibit. Which option will provide the configuration that is needed for router R1 to dynamically learn routes to the 192.168.100.16/28, 192.168.100.32/28, and 192.168.100.48/28 subnetworks?

with static routes

with a routed protocol

with a routing protocol

with directly connected routes



29. Refer to the exhibit. The network is configured for RIPv2 routing. What path will a packet from router A take to reach the LAN that is attached to router F if the 56 kb/s link between router A and router E fails?

- A, B, C, FA, B, C, E, F
- A, D, G, H, F
- A, D, G, E, F
- A, D, G, E, H, F

```
R1# show ip ospf interface fa0/0
FastEthernet0/0 is up, line protocol is up
Internet address 192.168.1.2/24, Area 0
Process ID 1, Router ID 192.168.31.33, Network Type BROADCAST, Cost: 10
Transmit Delay is 1 sec, State DR, Priority 1
Designated Router (ID) 192.168.31.33, Interface address 192.168.1.2
No backup designated router on this network
Timer intervals configured, Hello 5 Dead 20, Wait 20, Retransmit 5
```

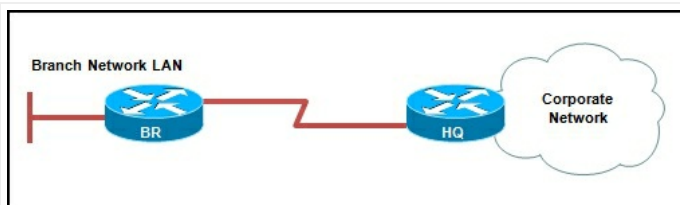
```
R2# show ip ospf interface fa0/0
FastEthernet0/0 is up, line protocol is up
Internet address 192.168.1.1/24, Area 0
Process ID 2, Router ID 192.168.31.11, Network Type BROADCAST, Cost: 10
Transmit Delay is 1 sec, State DR, Priority 1
Designated Router (ID) 192.168.31.11, Interface address 192.168.1.1
No backup designated router on this network
Timer intervals configured, Hello 10 Dead 40, Wait 40, Retransmit 5
```

30. Refer to the exhibit. Routers R1 and R2 are directly connected through a FastEthernet link but cannot form a neighbor adjacency. What could resolve the problem?

- The cost on R1 should be set higher.
- The priority on R1 should be set higher.
- The OSPF process ID numbers must match.
- A backup designated router needs to be added to the network.
- The hello and dead timers must be configured with the same values on both routers.**

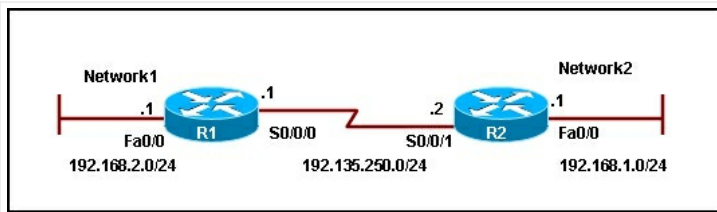
31. Which feature of RIPv2 enables it to function as a classless routing protocol?

- Subnet masks are included in routing updates.** Routing updates are triggered by topology changes.
- Next-hop addresses are included in routing updates.
- Multicast addresses are used to send routing updates.



32. Refer to the exhibit. Which solution provides the most efficient use of router resources for forwarding traffic between BR and HQ?

- RIP
- RIPv2
- EIGRP
- static routes**



33. Refer to the exhibit. A network administrator configures a static route on router R1 to reach the 192.168.1.0/24 network. Which IP address should be used as the next-hop address in the ip route command?

- 192.168.1.1
- 192.168.2.1
- 192.135.250.1
- 192.135.250.2**

```

Router# show ip protocols

Routing Protocol is "eigrp 100 "
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Default networks flagged in outgoing updates
  Default networks accepted from incoming updates
  EIGRP metric weight K1=1, K2=0, K3=1, K4=0, K5=0
  EIGRP maximum hopcount 100
  EIGRP maximum metric variance 1
  
```

34. Refer to the exhibit. Which two interface variables will determine the metric that is used on EIGRP routes? (Choose two.)

- load
- delay**
- reliability
- hop count
- bandwidth**

35. Which protocol is used by EIGRP to deliver and receive update packets?

- FTP
- RTP**
- TCP
- TFTP
- UDP

36. Which multicast address does EIGRP use to send hello and updates packets?

- 224.0.0.5
- 224.0.0.6
- 224.0.0.9
- 224.0.0.10**

37. What is the key responsibility of the switching function within a router?

- to choose the best path based on the lowest path cost
- to encapsulate packets in the correct data link frame type**
- to look up the correct exit interface for the destination IP address
- to look up the correct exit interface for the destination MAC address
- to resolve the destination IP address into a destination MAC address

```
Router# show ip interface brief
```

```
<output omitted>
```

```
FastEthernet0/0 172.16.4.1 YES manual administratively down down
```

38. Refer to the exhibit. If the attached device is configured correctly, what action can be taken to change the state of FastEthernet0/0 to Up Up?

Attach a crossover cable to the interface.

Change the encapsulation on the interface to HDLC.

Issue the no shutdown command for the interface.

Set the clock rate for the interface to 56000.

39. Which two commands can be used to modify the default OSPF metric calculation of a link? (Choose two.)

R1(config-if)# bandwidth

R1(config-if)# ip ospf costR1(config-if)# ip ospf priority

R1(config-if)# ip ospf hello-interval

R1(config-router)# default-information originate

```
R3# show ip route
```

```
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
```

```
<output omitted>
```

```
Gateway of last resort is not set
```

```
192.168.10.0/30 is subnetted, 2 subnets
C    192.168.10.4 is directly connected, Serial0/0/0
C    192.168.10.8 is directly connected, Serial0/0/1
172.16.0.0/16 is variably subnetted, 3 subnets, 2 masks
D    172.16.1.0/24 [90/2172416] via 192.168.10.5, 00:00:11, Serial0/0/0
D    172.16.2.0/24 [90/3014400] via 192.168.10.9, 00:00:12, Serial0/0/1
D    172.16.3.0/30 [90/41024000] via 192.168.10.5, 00:00:12, Serial0/0/0
      [90/41024000] via 192.168.10.9, 00:00:12, Serial0/0/1
C    192.168.1.0/24 is directly connected, FastEthernet0/0
<output omitted>
```

40. Refer to the exhibit. Which two statements are true based on the exhibited output? (Choose two.)

Automatic summarization is disabled.

The EIGRP routing protocol is being used. There is one feasible successor in the routing table.

The serial interface So/o/o is administratively down.

The router created the route to 172.16.1.0/24 via the So/o/o interface.

```
RouterA# show ip ospf interface fa0/0
```

```
FastEthernet0/0 is up, line protocol is up
Internet address is 192.168.254.202/24, Area 0
Process ID 1, Router ID 192.77.99.1, Network Type BROADCAST, Cost: 10
Transmit Delay is 1 sec, State OTHER, Priority 1
Designated Router id 192.168.254.10, Interface address 192.168.254.10
Backup Designated router id 192.168.254.28, Interface addr 192.168.254.28
Timer intervals configured, Hello 10, Dead 60, Wait 40, Retransmit 5
Hello due in 00:00:05
Index 1/1, flood queue length 0
Next 0x0(0)/0x0(0)
Last flood scan length is 1, maximum is 1
Last flood scan time is 0 msec, maximum is 0 msec
Neighbor Count is 8, Adjacent neighbor count is 2
Suppress hello for 0 neighbor(s)
```

```
RouterB# show ip ospf interface fa0/0
```

```
FastEthernet0/0 is up, line protocol is up
Internet address is 192.168.254.201/24, Area 0
Process ID 1, Router ID 192.77.99.2, Network Type BROADCAST, Cost: 10
Transmit Delay is 1 sec, State OTHER, Priority 1
Designated Router id 192.168.254.10, Interface address 192.168.254.10
Backup Designated router id 192.168.254.28, Interface addr 192.168.254.28
Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
Hello due in 00:00:03
Index 1/1, flood queue length 0
Next 0x0(0)/0x0(0)
Last flood scan length is 1, maximum is 1
Last flood scan time is 0 msec, maximum is 0 msec
Neighbor Count is 8, Adjacent neighbor count is 2
Suppress hello for 0 neighbor(s)
```

41. Refer to the exhibit. Two connected routers are unable to establish adjacency. Based on the show ip ospf interface output, what could be the problem?

The dead timers do not match. The routers have not reached full state.
The two routers are in different autonomous systems.
The physical interface between the two routers is down.

42. What is a characteristic of classful routing?

support for VLSM
the use of 48-bit addresses
routing updates do not include a subnet mask
addresses that are typically entered in hexadecimal format

```
Router# show ip route
<output omitted>
 172.16.0.0/16 is variably subnetted, 4 subnets, 3 masks
D    172.16.0.0/16 is a summary, 00:00:52, Null0
D    172.16.1.0/24 [90/40514560] via 172.16.3.1, 00:00:52, Serial0/0/0
C    172.16.2.0/24 is directly connected, FastEthernet0/0
C    172.16.3.0/30 is directly connected, Serial0/0/0
D    192.168.1.0/24 [90/3014400] via 192.168.10.10, 00:00:11, Serial0/0/1
 192.168.10.0/24 is variably subnetted, 3 subnets, 2 masks
D    192.168.10.0/24 is a summary, 00:00:11, Null0
D    192.168.10.4/30 [90/3523840] via 192.168.10.10, 00:00:11, Serial0/0/1
C    192.168.10.8/30 is directly connected, Serial0/0/1
S*   0.0.0.0/0 is directly connected, Serial0/0/1
Router#
```

43. Refer to the exhibit. A network administrator is investigating why data packets with destination addresses of 172.16.10.10 and 192.168.10.100 are being dropped instead of being forwarded via the static route as expected. After confirming that the ip classless command has been applied on all routers in the network, what other action should the administrator take to ensure that data packets to these addresses are forwarded via the static route?

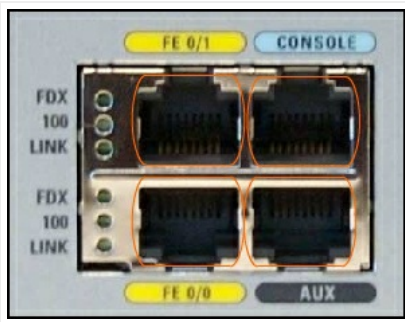
Check that all routers are configured with the same autonomous system number.
Issue the no auto-summary command within the EIGRP configuration of all routers.
Issue the no passive-interface command within the EIGRP configuration of all routers.
Configure the static route to point to the next hop address instead of the outbound interface.

44. A router in an EIGRP enterprise network has a default route configured via the interface that connects to the ISP. Which command would the network administrator apply on this router so that other routers in the EIGRP AS 100 network will use this default route?

redistribute static
redistribute eigrp 100
redistribute connected
default-information originate

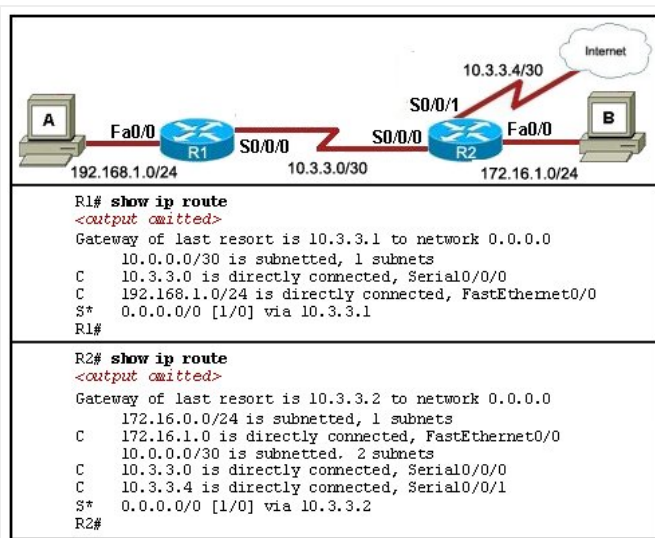
45. A network administrator configures a new router and saves the configuration. The router is taken to the installation site and installed. On startup, what component will the router search first by default for the saved configuration?

CompactFlash
CPU
boot ROM
flash
NVRAM
UART



46. Refer to the exhibit. A network engineer removes a new router from the shipping container and powers on the router to ensure it passes POST. Which port would the engineer use to perform the initial configuration?

- AUX
- console
- FE0/0
- FE0/1



47. Refer to the exhibit. A ping between host A and host B is successful, but pings from host A to operational hosts on the Internet fail. What is the reason for this problem?

- The FastEthernet interface of R1 is disabled.
- One of the default routes is configured incorrectly.**
- A routing protocol is not configured on both routers.
- The default gateway has not been configured on host A.

48. You have been asked to explain converged networks to a trainee. How would you accurately describe a converged network?

- A network is converged when all routers have formed an adjacency.
- A network is converged immediately after a topology change has occurred.
- A network is converged when all routers flush the unreachable networks from their routing tables.
- A network is converged after all routers share the same information, calculate best paths, and update their routing tables.**

49. A network administrator is troubleshooting a RIPv2 network that is not converging as expected. Which command can the administrator use on each

router to view the RIPv2 updates as they are received?

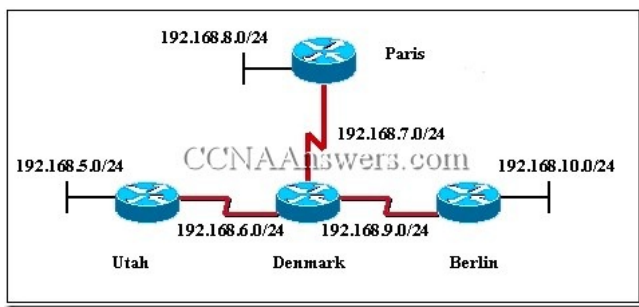
debug ip rip

show ip route
debug ip routing
show ip protocols
show ip interface brief

50. A network administrator is setting up a new router with a device name of Admin, an encrypted password of cangetin, and the IP address 192.168.1.22/29 assigned to the first FastEthernet interface. Which command sequence correctly configures this router?

```
Router(config)# hostname Admin
Admin(config)# enable secret cangetin
Admin(config)# interface fa0/1
Admin(config-if)# ip address 192.168.1.22 255.255.255.248
Router(config)# hostname Admin
Admin(config)# enable password cangetin
Admin(config)# interface fa0/1
Admin(config-if)# ip address 192.168.1.22 255.255.255.248
Router(config)# hostname Admin
Admin(config)# enable secret cangetin
Admin(config)# interface fa0/0
Admin(config-if)# ip address 192.168.1.22 255.255.255.248
Router(config)# hostname Admin
Admin(config)# enable password cangetin
Admin(config)# interface fa0/0
Admin(config-if)# ip address 192.168.1.22 255.255.255.248
```

Set-4



Refer to the exhibit. Given the topology shown in the exhibit, what three commands are needed to configure EIGRP on the Paris router? (Choose three.)

Paris(config)# router eigrp 100

Paris(config)# router eigrp

Paris(config-router)# network 192.168.6.0

Paris(config-router)# network 192.168.7.0

Paris(config-router)# network 192.168.8.0

Paris(config-router)# network 192.168.9.0

2. In a lab test environment, a router has learned about network 172.16.1.0 through four different dynamic routing processes. Which route will be used to reach this network?

D 172.16.1.0/24 [90/2195456] via 192.168.200.1, 00:00:09, Serial0/0/0

O 172.16.1.0/24 [110/1012] via 192.168.200.1, 00:00:22, Serial0/0/0

R 172.16.1.0/24 [120/1] via 192.168.200.1, 00:00:17, Serial0/0/0

I 172.16.1.0/24 [100/1192] via 192.168.200.1, 00:00:09, Serial0/0/0

3. Which routing protocol maintains a topology table separate from the routing table?

IGRP

RIPv1

RIPv2

EIGRP

4. Refer to the exhibit. R1 and R2 are unable to establish an adjacency. What two configuration changes will correct the problem? (Choose two.)

Set a lower priority on R2.

Configure the routers in the same area.

Set a lower cost on R2 compared to R1.

Add a backup designated router to the network.

Match the hello and dead timers on both routers.

5. Which statement is true about the metrics used by routing protocols?

A metric is a value used by a particular routing protocol to compare paths to remote networks.

A common metric is used by all routing protocols.

The metric with the highest value is installed in the routing table.

The router may use only one parameter at a time to calculate the metric.

6. Refer to the exhibit. Although R2 is configured correctly, host A is unable to access the Internet. Which two static routes can be configured on R1 to enable Internet connectivity for host A? (Choose two.)

ip route 0.0.0.0 0.0.0.0 Fa0/0

ip route 0.0.0.0 0.0.0.0 Fa0/1

ip route 0.0.0.0 0.0.0.0 10.1.1.1

ip route 0.0.0.0 0.0.0.0 10.1.1.2

ip route 209.165.202.0 255.255.255.0 10.1.1.1

ip route 209.165.202.0 255.255.255.0 10.1.1.2

7. Refer to the exhibit. Host A is unable to access the Internet. What is the reason for this?

The IP address of host A is incorrect.

The default gateway of host A is incorrect.

The Fa0/1 interfaces of the two routers are configured for different subnets.

The subnet mask for the Fa0/0 interface of R1 is incorrect.

8.

```
R1# show ip ospf interface serial 0/0/0
Serial10/0/0 is up, line protocol is up
Internet Address 192.168.10.1/30, Area 0
Process ID 1, Router ID 10.1.1.1, Network Type POINT_TO_POINT, Cost: 64
Transmit Delay is 1 sec, State POINT TO POINT,
Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
oob-resync timeout 40
Hello due in 00:00:07
<output omitted>

R2# show ip ospf interface serial 0/0/0
Serial10/0/0 is up, line protocol is up
Internet Address 192.168.10.2/30, Area 0
Process ID 2, Router ID 10.2.2.2, Network Type POINT_TO_POINT, Cost: 64
Transmit Delay is 1 sec, State POINT TO POINT,
Timer intervals configured, Hello 20, Dead 50, Wait 40, Retransmit 5
oob-resync timeout 40
Hello due in 00:00:07
<output omitted>
```

Refer to the exhibit. Two routers are unable to establish an adjacency. What is the possible cause for this?

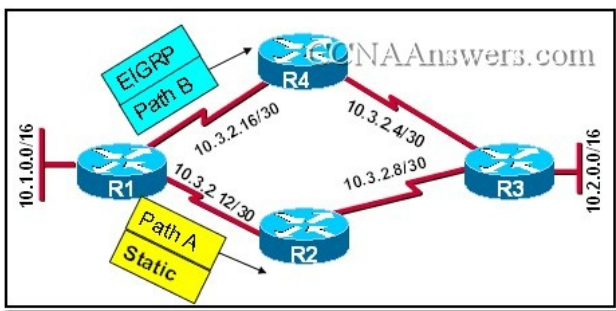
The two routers are connected on a multiaccess network.

The hello and dead intervals are different on the two routers.

They have different OSPF router IDs.

They have different process IDs.

9.



Refer to the exhibit. R1 knows two routes, Path A and Path B, to the Ethernet network attached to R3. R1 learned Path A to network 10.2.0.0/16 from a static route and Path B to network 10.2.0.0/16 from EIGRP. Which route will R1 install in its routing table?

Both routes are installed and load balancing occurs across both paths.

The route via Path B is installed because the EIGRP route has the best metric to network 10.2.0.0/16.

The route via Path A is installed because the static route has the best metric to network 10.2.0.0/16.

The route via Path B is installed because the EIGRP route has the lowest administrative distance to network 10.2.0.0/16.

The route via Path A is installed because the static route has the lowest administrative distance to network 10.2.0.0/16.

10. Refer to the exhibit. A ping between the serial interfaces of R1 and R2 is successful, but a ping between their FastEthernet interfaces fails. What is the reason for this problem?

The FastEthernet interface of R1 is disabled.

One of the default routes is configured incorrectly.

A routing protocol is not configured on both routers.

The default gateway has not been configured on both routers.

11. Which router component is used to store the routing table?

Flash

NVRAM

ROM

SDRAM

12. Refer to the exhibit. Both routers are using the RIPv2 routing protocol and static routes are undefined. R1 can ping 192.168.2.1 and 10.1.1.2, but is unable to ping 192.168.4.1.

What is the reason for the ping failure?

The serial interface between two routers is down.

R2 is not forwarding the routing updates.

The 192.168.4.0 network is not included in the RIP configuration of R2.

RIPv1 needs to be configured.

13. What two routing protocols use a hierarchal network topology? (Choose two.)

IS-IS

EIGRP

OSPF

RIPv1

RIPv2

14. Refer to the exhibit. Routers R1 and R2 are directly connected via their serial interfaces and are both running the EIGRP routing protocol. R1 and R2 can ping the directly connected serial interface of their neighbor, but they cannot form an EIGRP neighbor adjacency.

What action should be taken to solve this problem?

Enable the serial interfaces of both routers.

Configure EIGRP to send periodic updates.

Configure the same hello interval between the routers.

Configure both routers with the same EIGRP process ID.

15.

```
R1# show ip route
<output omitted>
Gateway of last resort is not set

172.30.0.0/16 is variably subnetted, 6 subnets, 2 masks
R   172.30.200.32/28 [120/2] via 209.165.200.229, 00:00:01, Serial0/0/0
R   172.30.200.16/28 [120/2] via 209.165.200.229, 00:00:01, Serial0/0/0
C   172.30.2.0/24 is directly connected, Loopback0
C   172.30.1.0/24 is directly connected, FastEthernet0/0
R   172.30.100.0/24 [120/2] via 209.165.200.229, 00:00:01, Serial0/0/0
R   172.30.110.0/24 [120/2] via 209.165.200.229, 00:00:01, Serial0/0/0
209.165.200.0/30 is subnetted, 2 subnets
R   209.165.200.232 [120/1] via 209.165.200.229, 00:00:02, Serial0/0/0
C   209.165.200.228 is directly connected, Serial0/0/0
10.0.0.0/16 is subnetted, 1 subnets
R   10.1.0.0 [120/1] via 209.165.200.229, 00:00:02, Serial0/0/0
R   192.168.0.0/16 [120/1] via 209.165.200.229, 00:00:02, Serial0/0/0
```

Refer to the exhibit. What information can be determined from the highlighted output?

R1 is originating the route 172.30.200.32/28.

Automatic summarization is disabled.

The 172.30.200.16/28 network is one hop away from R1.

A classful routing protocol is being used.

16. Refer to the exhibit. A network administrator wants to reduce the size of the routing table of R1. Which partial routing table entry in R1 represents the route summary for R2, without including any additional subnets?

10.0.0.0/16 is subnetted, 1 subnets

D 10.5.0.0[90/205891] via 192.168.1.2, S0/0/0

10.0.0.0/24 is subnetted, 4 subnets

D 10.5.0.0[90/205198] via 192.168.1.2, S0/0/0

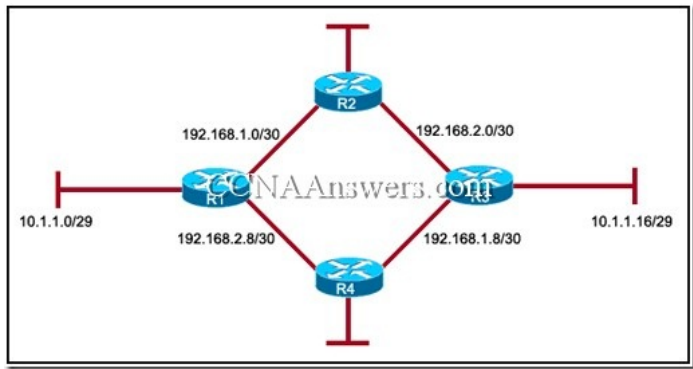
10.0.0.0/22 is subnetted, 1 subnets

D 10.5.0.0[90/205901] via 192.168.1.2, S0/0/0

10.0.0.0/8 is subnetted, 4 subnets

D 10.5.0.0[90/205001] via 192.168.1.2, S0/0/0

17.



Refer to the exhibit. All routers are running RIPv1. The two networks 10.1.1.0/29 and 10.1.1.16/29 are unable to access each other. What can be the cause of this problem?

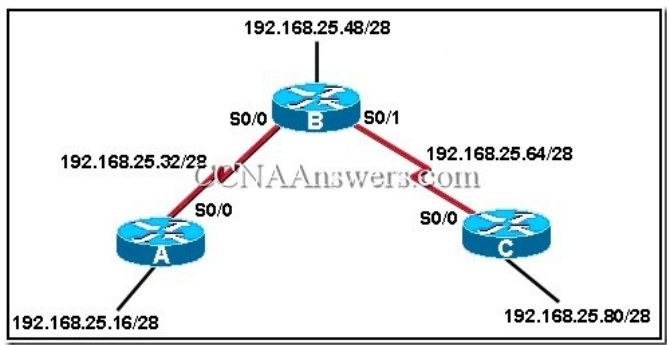
Because RIPv1 is a classless protocol, it does not support this access.

RIPv1 does not support discontinuous networks.

RIPv1 does not support load balancing.

RIPv1 does not support automatic summarization.

18.



Refer to the exhibit. A network administrator has enabled RIP on routers B and C in the network diagram. Which of the following commands will prevent RIP updates from being sent to Router A?

A(config)# router rip

A(config-router)# passive-interface S0/0

B(config)# router rip

B(config-router)# network 192.168.25.48

B(config-router)# network 192.168.25.64

A(config)# router rip

A(config-router)# no network 192.168.25.32

B(config)# router rip

B(config-router)# passive-interface S0/0

A(config)# no router rip

19. Refer to the exhibit. A network administrator has configured R1 as shown, and all interfaces are functioning correctly. A ping from R1 to 172.16.1.1 fails. What could be the cause of this problem?

The serial interface on R1 is configured incorrectly.

The default route is configured incorrectly.

The default-information originate command must be issued on R1.

Autosummarization must be disabled on R1.

20. A router has learned two equal cost paths to a remote network via the EIGRP and RIP protocols. Both protocols are using their default configurations. Which path to the remote network will be installed in the routing table?

the path learned via EIGRP

the path learned via RIP

the path with the highest metric value

both paths with load balancing

21. Refer to the exhibit. What is the meaning of the highlighted value 2?

It is the administrative distance of the routing protocol.

It is the number of hops between R2 and the 192.168.8.0/24 network.

It is the value used by the DUAL algorithm to determine the bandwidth for the link.

It is the convergence time measured in seconds.

22.

```
R1# show running-config
<output omitted>
ip route 192.168.1.0 255.255.255.0 Fa0/0
ip route 0.0.0.0 0.0.0.0 Serial0/1/0
<output omitted>
R1# debug ip rip
RIP debugging protocol is on
R1#
*R1 1 13:20:00.309: RIP: received v1 update from 172.16.1.1 on Serial0/0/0
*R1 1 13:20:00.410:      192.168.1.0 in 2 hops
*R1 1 13:20:00.410:      192.168.100.0 in 1 hops
*R1 1 13:20:00.309: RIP: received v1 update from 172.16.2.1 on Serial0/0/1
*R1 1 13:20:00.309:      192.168.1.0 in 1 hops
*R1 1 13:20:00.311:      192.168.100.0 in 2 hops
*R1 1 13:21:00.409: RIP: sending v1 update to 255.255.255.255 via
Serial0/0/0 (172.16.1.2)
*R1 1 13:20:00.103: RIP: build update entries
*R1 1 13:20:00.309:   network      192.168.9.0 metric 1
*R1 1 13:20:00.309:   network      192.168.2.0 metric 1
<output omitted>
```

Refer to the exhibit. Based on the output from the show running-config and debug ip rip commands, what are two of the routes that are added to the routing table of R1? (Choose two.)

R 192.168.1.0/24 [120/1] via 172.16.2.1, 00:00:24, Serial0/0/1

R 192.168.100.0/24 [120/1] via 172.16.1.1, 00:00:24, Serial0/0/0

S 192.168.1.0/24 [1/0] via FastEthernet0/0

R 192.168.9.0/24 [120/1] via 172.16.2.1, 00:00:24, Serial0/0/0

R 192.168.2.0/24 [120/1] via 172.16.1.2, 00:00:24, Serial0/0/0

23. Refer to the exhibit. Routers R1 and R3 use different routing protocols with default administrative distance values. All devices are properly configured and the destination network is advertised by both protocols.

Which path will be used to transmit the data packets between PC1 and PC2?

The packets will travel via R2-R1.

The packets will travel via R2-R3.

The traffic will be load-balanced between two paths — via R2-R1 and via R2-R3.

The packets will travel via R2-R3, and the other path via R2-R1 will be retained as the backup path.

24. What are two functions of a router? (Choose two.)

It forwards data packets toward their destination.

It forwards the packet to the destination if the TTL value is 0.

It changes the destination IP address of data packets before forwarding them to an exit interface.

It determines the best path based on the destination MAC address.

It acts as an intersection between multiple IP networks.

25.

```
R1# show ip route
<output omitted>
Gateway of last resort is not set
S 172.16.0.0/24 is subnetted, 1 subnets
  172.16.1.0 is directly connected, Serial0/0/0
C 10.0.0.0/30 is subnetted, 1 subnets
  10.1.1.0 is directly connected, Serial0/0/0
C 192.168.1.0/24 is directly connected, FastEthernet0/0
R1#

R2# show ip route
<output omitted>
Gateway of last resort is 10.3.3.2 to network 0.0.0.0
C 172.16.0.0/24 is subnetted, 1 subnets
  172.16.1.0 is directly connected, FastEthernet0/0
C 10.0.0.0/30 is subnetted, 2 subnets
  10.3.3.0 is directly connected, Serial0/0/1
  10.1.1.0 is directly connected, Serial0/0/0
S* 192.168.1.0/24 is directly connected, Serial0/0/0
  0.0.0.0/0 [1/0] via 10.3.3.2
R2#

R3# show ip route
<output omitted>
Gateway of last resort is 10.3.3.1 to network 0.0.0.0
C 10.0.0.0/30 is subnetted, 1 subnets
  10.3.3.0 is directly connected, Serial0/0/1
S* 192.168.3.0/24 is directly connected, FastEthernet0/0
  0.0.0.0/0 [1/0] via 10.3.3.1
R3#
```

Refer to the exhibit. The network has three connected routers: R1, R2, and R3. The routes of all three routers are displayed. All routers are operational and pings are not blocked on this network.

Which ping will fail?

from R1 to 172.16.1.1

from R1 to 192.168.3.1

from R2 to 192.168.1.1

from R2 to 192.168.3.1

26. A network administrator needs to assign the very last usable IP address in the 172.24.64.0/18 network range to the router interface that serves this LAN. Which IP address should the administrator configure on the interface?

172.16.128.154/18

172.16.255.254/18

172.24.64.254/18

172.24.127.254/18

27. Which two statements are true about the EIGRP successor route? (Choose two.)

It is saved in the topology table for use if the primary route fails.

It may be backed up by a feasible successor route.

It is used by EIGRP to forward traffic to the destination.

It is flagged as active in the routing table.

After the discovery process has occurred, the successor route is stored in the neighbor table.

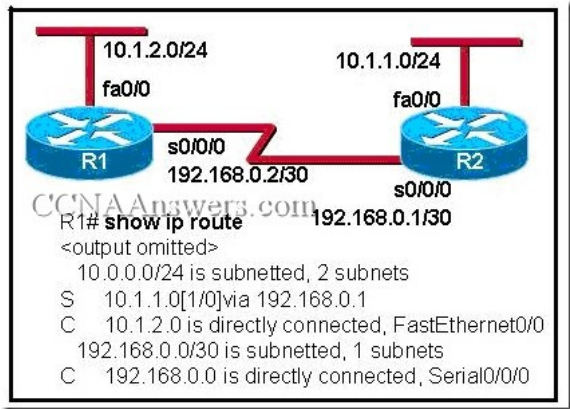
28. Refer to the exhibit. An administrator is adding a new subnet of 50 hosts to R3. Which subnet address should be used for the new subnet that provides enough addresses while wasting a minimum of addresses?

192.168.1.0/24

192.168.1.48 /28

192.168.1.32/27

29.



Refer to the exhibit. Which statement is true concerning the routing configuration?

Using dynamic routing instead of static routing would have required fewer configuration steps.

The 10.1.1.0/24 and 10.1.2.0/24 routes have adjacent boundaries and should be summarized.

Packets routed to the R2 Fast Ethernet interface require two routing table lookups.

The static route will not work correctly.

30. Refer to the exhibit. Which statement is true about router R2?

The routing table content indicates that interface S0/0/0 is administratively down.

The route for 172.16.1.0 is a static route.

A packet that is destined for a host on the 172.16.3.0 network is forwarded without performing a routing table lookup.

The packets that are routed to network 172.16.1.0 require two routing table lookups.

31. What command would the network administrator apply to a router that is running OSPF to advertise the entire range of addresses included in 172.16.0.0/19 in area 0?

R1(config-router)# network 172.16.0.0 0.0.0.255 area 0

R1(config-router)# network 172.16.0.0 0.0.3.255 area 0

R1(config-router)# network 172.16.0.0 0.0.15.255 area 0

R1(config-router)# network 172.16.0.0 0.0.31.255 area 0

32. How does route poisoning prevent routing loops?

New routing updates are ignored until the network has converged.

Failed routes are advertised with a metric of infinity.

A route is marked as unavailable when its Time to Live is exceeded.

The unreachable route is cleared from the routing table after the invalid timer expires.

33. Refer to the exhibit. A router learns a route to the 192.168.6.0 network, as shown in the output of the show ip rip database command. However, upon running the show ip route command, the network administrator sees that the router has installed a different route to the 192.168.6.0 network learned via EIGRP. What could be the reason for the missing RIP route?

Compared to RIP, EIGRP has a lower administrative distance.

Compared to EIGRP, RIP has a higher metric value for the route.

Compared to RIP, the EIGRP route has fewer hops.

Compared to RIP, EIGRP has a faster update timer.

34. Refer to the exhibit. Packets destined to which two networks will require the router to perform a recursive lookup? (Choose two.)

10.0.0.0/8

64.100.0.0/16

128.107.0.0/16

172.16.40.0/24

192.168.1.0/24

192.168.2.0/24

35. Which statement is true about the RIPv1 protocol?

It is a link-state routing protocol.

It excludes subnet information from the routing updates.

It uses the DUAL algorithm to insert backup routes into the topology table.

It uses classless routing as the default method on the router.

36. All routers in a network are configured in a single OSPF area with the same priority value. No loopback interface has been set on any of the routers. Which secondary value will the routers use to determine the router ID?

The highest MAC address among the active interfaces of the network will be used.

There will be no router ID until a loopback interface is configured.

The highest IP address among the active FastEthernet interfaces that are running OSPF will be used.

The highest IP address among the active interfaces will be used.

37. Refer to the exhibit. Router R2 is configured properly and all interfaces are functional. Router R1 has been installed recently. Host A is unable to ping host B. Which procedure can resolve this problem?

Configure a static route on R1 using the IP address of the serial interface on R1.

Configure a default route on R1 with the exit interface Fa0/0 on R1.

Configure a static route on R1 using the IP address of S0/0/0 on R2.

Configure a default route on R1 using the IP address of Fa0/0 on R2.

38. Which three statements describe the operation of routing with EIGRP? (Choose three.)

As new neighbors are discovered, entries are placed in a neighbor table.

If the feasible successor has a higher advertised cost than the current successor route, then it becomes the primary route.

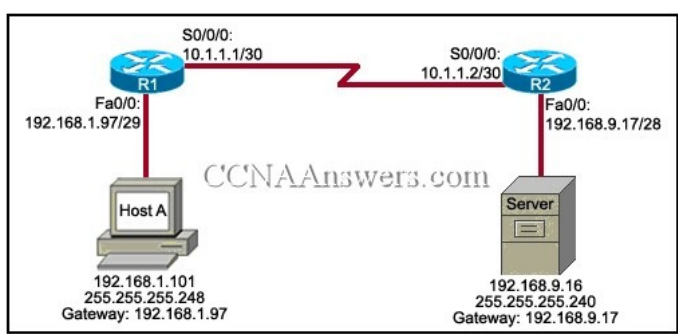
If hello packets are not received within the hold time, DUAL must recalculate the topology.

The reported distance is the distance to a destination as advertised by a neighbor.

EIGRP maintains full knowledge of the network topology in the topology table and exchanges full routing information with neighboring routers in every update.

EIGRP builds one routing table that contains routes for all configured routed protocols.

39.



Refer to the exhibit. The network administrator is planning IP addressing of a new network. What part of this addressing scheme must be changed to allow communication between host A and the server?

the IP address of the server

the default gateway of host A

the IP address of host A

the default gateway of the server

40. Which two statements are correct about the split horizon with poison reverse method of routing loop prevention? (Choose two.)

It is enabled by default on all Cisco IOS implementations.

It assigns a value that represents an infinite metric to the poisoned route.

It sends back the poisoned route update to the same interface from where it was received.

It instructs routers to hold all changes that might affect routes, for a specified period of time.

It limits the number of hops a packet can traverse through the network before it is discarded.

41. What are two tasks that must be completed before two routers can use OSPF to form a neighbor adjacency? (Choose two.)

The routers must elect a designated router.

The routers must agree on the network type.

The routers must use the same dead interval.

The routers must exchange link state requests.

The routers must exchange database description packets.

42. Which two components are used to determine the router ID in the configuration of the OSPF routing process? (Choose two.)

the IP address of the first FastEthernet interface

the highest IP address of any logical interface

the highest IP address of any physical interface

the default gateway IP address

the priority value of 1 on any physical interface

43. What is the function of the OSPF LSR packet?

It is used to confirm the receipt of LSUs.

It is used to establish and maintain adjacency with other OSPF routers.

It is used by the receiving routers to request more information about any entry in the DBD.

It is used to check the database synchronization between routers.

44. Refer to the exhibit. Which summarization should R1 use to advertise its networks to R2?

192.168.1.0/24

192.168.0.0/24

192.168.0.0/22

192.168.1.0/22

45. Refer to the exhibit. The hosts that are connected to R2 are unable to ping the hosts that are connected to R1. How can this problem be resolved?

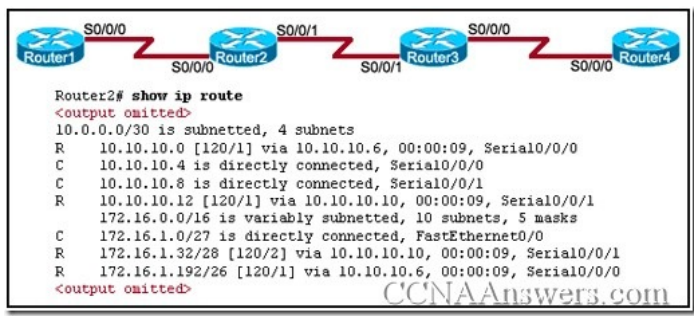
Configure the router ID on both routers.

Configure the R2 router interfaces for area 0.

Configure a loopback interface on both routers.

Configure the proper subnet masks on the router interfaces.

46.



Refer to the exhibit. Which router is advertising subnet 172.16.1.32/28?

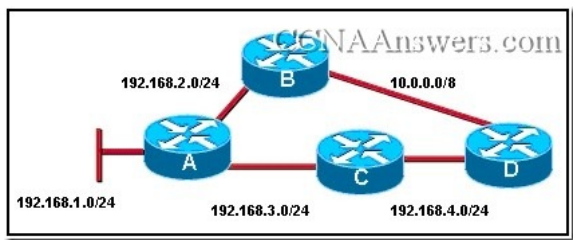
Router1

Router2

Router3

Router4

47.



Refer to the exhibit. All router interfaces are configured with an IP address and are operational. If no routing protocols or static routes are configured, what information will be included in the show ip route command output for router A?

All of the 192.168.x.0 networks will be in the routing table.

Routes to networks 192.168.1.0/24, 192.168.2.0/24, and 192.168.3.0/24 will be in the routing table.

The routing table will be empty because routes and dynamic routes have not been configured.

A default route is automatically installed in the routing table to allow connectivity between the networks.

48. When a router boots, what is the default order to locate the Cisco IOS if there is no boot system command?

ROM, TFTP server, flash

flash, TFTP server, ROM

flash, NVRAM, TFTP server

NVRAM, TFTP server, flash

49. Which two statements are true for link-state routing protocols? (Choose two.)

Routers that run a link-state protocol can establish a complete topology of the network.

Routers in a multipoint network that run a link-state protocol can exchange routing tables.

Routers use only hop count for routing decisions.

The shortest path first algorithm is used.

Split horizon is used to avoid routing loops.

50. Refer to the exhibit. While trying to diagnose a routing problem in the network, the

network administrator runs the debug ip rip command. What can be determined from the output of this command?

The router will be unable to ping 192.168.1.2.

The router has two interfaces that participate in the RIP process.

The router will forward the updates for 192.168.1.0 on interface Serial0/0/1.

The router is not originating routes for 172.16.1.0.

51. Refer to the exhibit. Which three statements are true of the routing table for Router1? (Choose three.)

The route to network 172.16.0.0 has an AD of 156160.

Network 192.168.0.16 can best be reached using FastEthernet0/0.

The AD of EIGRP routes has been manually changed to a value other than the default value.

Router1 is running both the EIGRP and OSPF routing process.

Network 172.17.0.0 can only be reached using a default route.

No default route has been configured.

52. Refer to the exhibit. The 10.4.0.0 network fails. What mechanism prevents R2 from receiving false update information regarding the 10.4.0.0 network?

split horizon

hold-down timers

route poisoning

triggered updates

53. Which two statements are true regarding link-state routing protocols? (Choose two.)

They are aware of the complete network topology.

They offer rapid convergence times in large networks.

They do not include subnet masks in their routing updates.

They rely on decreasing hop counts to determine the best path.

They do not work well in networks that require special hierarchical designs.

They pass their entire routing tables to their directly connected neighbors only.

54. Refer to the exhibit. What action will R2 take for a packet that is destined for 192.168.2.0?

It will drop the packet.

It will forward the packet via the S0/0/0 interface.

It will forward the packet via the Fa0/0 interface.

It will forward the packet to R1.

55. Which three statements are true regarding the encapsulation and de-encapsulation of packets when traveling through a router? (Choose three.)

The router modifies the TTL field, decrementing it by one.

The router changes the source IP to the IP of the exit interface.

The router maintains the same source and destination IP.

The router changes the source physical address to the physical address of the exit interface.

The router changes the destination IP to the IP of the exit interface.

The router sends the packet out all other interfaces, besides the one it entered the router on.

56. A router boots and enters setup mode. What is the reason for this?

The IOS image is corrupt.

Cisco IOS is missing from flash memory.

The configuration file is missing from NVRAM.

The POST process has detected hardware failure.

57. Refer to the exhibit. How many routes are ultimate routes?

3

4

5

7

58. Refer to the exhibit. Which two facts can be derived from this output? (Choose two.)

Three network devices are directly connected to Router2.

The serial interface between Router2 and Router3 is up.

Router1 and Router3 are directly connected.

Six devices are up and running on the network.

Layer 3 functionality between routers is configured properly.

59. A network is configured with the IP, IPX, and AppleTalk protocols. Which routing protocol is recommended for this network?

RIPv1

RIPv2

EIGRP

OSPF

60. Refer to the exhibit. Which two statements are true based on the exhibited output? (Choose two.)

The administrative distance of EIGRP has been set to 50.

All routes are stable.

The show ip eigrp topology command has been run on R1.

The serial interface between the two routers is down.

Each route has one feasible successor.

61. Refer to the exhibit. To implement the RIPv2 protocol, the network administrator runs the commands as displayed. However, the show ip protocol command fails to display any output. How can the administrator solve the problem that is indicated by the lack of output from this command?

Include the default-information originate command.

Include the no auto-summary command.

Specify the network for which RIP routing has to be enabled.

Implement RIPv2 authentication in the network.

62.

R1# show cdp neighbors						
<output omitted>						
Device ID	Local Interface	Holdtime	Capability	Platform	Port ID	
ABCD	Ser 0/0/1	132	R S I	2811	Ser 0/0/0	
R1#						

Refer to the exhibit. The show cdp neighbors command was run at R1. Which two facts about the newly detected device can be determined from the output? (Choose two.)

ABCD is a router that is connected to R1.

ABCD is a non-CISCO device that is connected to R1.

The device is connected at the Serial0/0/1 interface of R1.

R1 is connected at the S0/0/1 interface of device ABCD.

ABCD does not support switching capability.

63. Refer to the exhibit. The routers are properly configured using a dynamic routing protocol with default settings, and the network is fully converged. Router A is forwarding data to router E. Which statement is true about the routing path?

If the network uses the RIP protocol, router A will determine that all paths have equal cost.

If the network uses the RIP protocol, router A will update only the A-C-E path in its routing table.

If the network uses the EIGRP routing protocol, router A will determine that path A-D-E has the lowest cost.

If both RIP and EIGRP protocols are configured on router A, the router will use the route information that is learned by the RIP routing protocol.

64. Refer to the exhibit. All interfaces are addressed and functioning correctly. The network administrator runs the tracert command on host A. Which two facts could be responsible for the output of this command? (Choose two.)

The entry for 192.168.2.0/24 is missing from the routing table of R1.

The entry for 192.168.1.0/24 is missing from the routing table of R2.

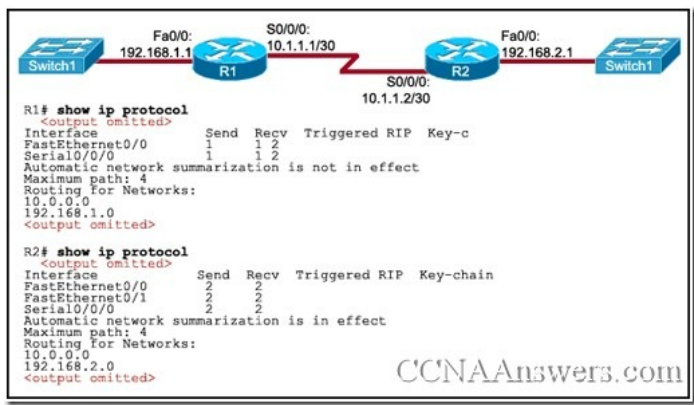
The entry for 10.1.1.0/30 is missing from the routing table of R1.

The entry for 10.1.1.0/30 is missing from the routing table of R2.

The entry for 192.168.1.0/24 is missing from the routing table of R1.

The entry for 192.168.2.0/24 is missing from the routing table of R2.

65.



Refer to the exhibit. Both routers are using the RIP protocol. Devices on the 192.168.1.1 network can ping the S0/0/0 interface on R2 but cannot ping devices on the 192.168.2.1 network. What is a possible cause of this problem?

The routers are configured with different versions of RIP.

R2 is not forwarding the routing updates.

The R1 configuration should include the no auto-summary command.

The maximum path number has been exceeded.

66. Refer to the exhibit. R2 is configured correctly. The network administrator has configured R1 as shown. Which two facts can be deduced from the configuration of R1? (Choose two.)

R1 will forward the route information for subnet 192.168.100.0/30.

The administrative distance has been set to 50 on R1.

R1 will not forward route information for subnet 192.168.100.4.0/30.

R1 will forward the EGRP update for subnet 10.10.10.0/30.

Autosummarization must be enabled.

67. Refer to the exhibit. All routers are properly configured to use the EIGRP routing protocol with default settings, and the network is fully converged. Which statement correctly describes the path that the traffic will use from the 10.1.1.0/24 network to the 10.1.2.0/24 network?

It will use the A-D path only.

It will use the path A-D, and the paths A-C-D and A-B-D will be retained as the backup paths.

It will use all the paths equally in a round-robin fashion.

The traffic will be load-balanced between A-B-D and A-C-D.

68. Which two router component and operation pair are correctly described? (Choose two.)

DRAM – loads the bootstrap

RAM – stores the operating system

Flash – executes diagnostics at bootup

NVRAM – stores the configuration file

ROM – stores the backup configuration file

POST – runs diagnostics on hardware modules

69. A network administrator uses the RIP routing protocol to implement routing within an autonomous system. What are two characteristics of this protocol? (Choose two.)

It uses the Bellman-Ford algorithm to determine the best path.

It displays an actual map of the network topology.

It offers rapid convergence in large networks.

It periodically sends complete routing tables to all connected devices.

It is beneficial in complex and hierarchically designed networks.

70. Refer to the exhibit. Which two components are required to complete the configuration? (Choose two.)

a CSU/DSU device

a DTE device

a DCE device

a crossover cable

a V.35 cable

71. Refer to the exhibit. The output of the show ip route command for router R1 is displayed. What action will the router take for a packet that is destined for 192.168.1.5?

It will drop the packet.

It will forward the packet to interface Serial0/0/0.

It will determine the route for the packet through a routing protocol.

It will forward the packet to the default gateway.

72. Refer to the exhibit. All routers are running the same routing protocol. Based on the exhibit and its displayed commands, which statement is true?

Routers B, C, and D have no access to the Internet.

The link to the ISP will be excluded from the routing protocol process.

A default route must be configured on every router.

The wildcard mask is incorrectly configured.

73. Refer to the exhibit. A network administrator is accessing router R1 from the console

port. Once the administrator is connected to the router, which password should the administrator enter at the R1> prompt to access the privileged EXEC mode?

Cisco001

Cisco123

Cisco789

Cisco901

74. A router has EIGRP configured as the only routing protocol. In what way might EIGRP respond if there is no feasible successor route to a destination network and the successor route fails?

It broadcasts hello packets to all routers in the network to re-establish neighbor adjacencies.

It sends queries to adjacent neighbors until a new successor route is found.

It immediately sends its entire routing table to its neighbors.

It will set the metric for the failed route to infinity.

Set-5

1. Which two statements are true for link-state routing protocols? (Choose two.)

Routers that run a link-state protocol can establish a complete topology of the network.

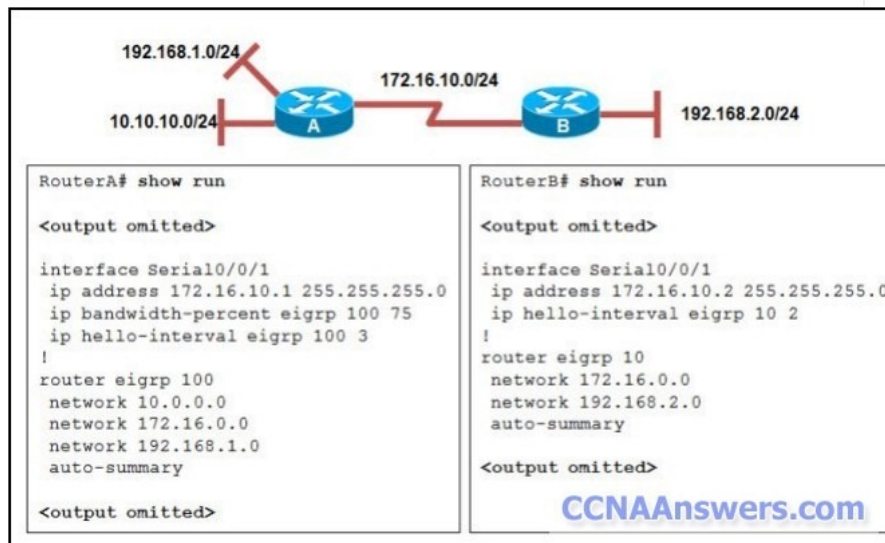
Routers in a multipoint network that run a link-state protocol can exchange routing tables.

Routers use only hop count for routing decisions.

The shortest path first algorithm is used.

Split horizon is used to avoid routing loops.

2.



Refer to the exhibit. RouterA and RouterB cannot successfully exchange EIGRP routes. What is the problem?

The hello intervals do not match.

The autonomous system numbers do not match.

The no auto-summary command is missing from both routers.

The `ip bandwidth-percent` command is missing from RouterB.

3.

```
hostname Router1
!
enable password C1$c0R0x!
!
<output omitted>
!
interface FastEthernet0/0
 ip address 10.1.1.1 255.255.255.0
 duplex auto
 speed auto
!
line con 0
 password $ecUr1Ty!
line vty 0 4
 login
!
end
```

Refer to the exhibit. Based on the partial output in the exhibit, why can users establish a console connection to this router without entering a password?

The login command was not entered on the console line.

The enable password should be an enable secret password.

No username and password combination has been configured.

Console connections cannot be configured to require users to provide passwords.

4.



Refer to the exhibit. The network administrator has run the following command on R1.

R1(config)# `ip route 192.168.2.0 255.255.255.0 172.16.1.2`

What is the result of running this command?

Traffic for network 192.168.2.0 is forwarded to 172.16.1.2.

This route is automatically propagated throughout the entire network.

Traffic for all networks is forwarded to 172.16.1.2.

The command invokes a dynamic routing protocol for 192.168.2.0.

5.

```
RouterA# show ip ospf neighbor
```

Neighbor	ID	Pri	State	Dead Time	Address	Interface
10.112.0.32	50	FULL/DR	00:00:34	192.0.2.125	FastEthernet0/1	
10.112.0.33	0	FULL/DROTHER	00:00:20	192.0.2.126	FastEthernet0/1	
10.112.0.34	0	FULL/-	00:00:33	192.0.2.145	Serial0/0/0	

Refer to the exhibit. What does the state "FULL/-" indicate?

The DR/BDR election is currently taking place.

The router with router ID 10.112.0.34 and RouterA are on a point-to-point network.

RouterA could not form a neighbor relationship with the router with router ID 10.112.0.34.

OSPF hello and dead timers between RouterA and the router with router ID 10.112.0.34 do not match.

6. A router has learned about a network through static and dynamic routing processes. Which route will be used

to reach network 192.168.168.0?

D 192.168.168.0/24 [90/2195456] via 192.168.200.1, 00:00:09, Ethernet0

O 192.168.168.0/24 [110/1012] via 192.168.200.1, 00:00:22, Ethernet0

R 192.168.168.0/24 [120/1] via 192.168.200.1, 00:00:17, Ethernet0

S 192.168.168.0/24 [1/0] via 192.168.200.1

7.

R1# show ip interface brief

Interface	IP-Address	OK?	Method	Status	Protocol
FastEthernet0/0	192.168.1.1	Yes	manual	up	up
FastEthernet0/1	192.168.1.65	Yes	manual	up	up
Serial0/0/0	192.168.1.35	Yes	manual	up	up
Serial0/0/1	192.168.1.130	Yes	manual	up	up

<output omitted>

Refer to the exhibit. A network administrator has configured OSPF using the following command:

network 192.168.1.32 0.0.0.31 area 0

Which router interface will participate in OSPF?

FastEthernet0/0

FastEthernet0/1

Serial0/0/0

Serial0/0/1

8. When would the IOS image held in ROM be used to boot the router?

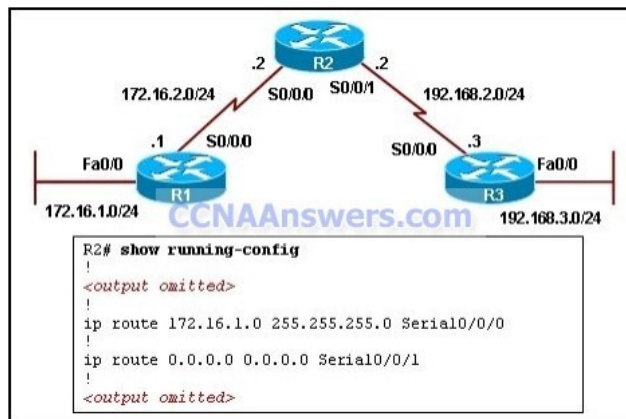
during a file transfer operation

during a normal boot process

when the full IOS cannot be found

when the running configuration directs the router to do this

9.



Refer to the exhibit. On the basis of the show running-config output, which option correctly reflects the routes that will be listed in the R2 routing table?

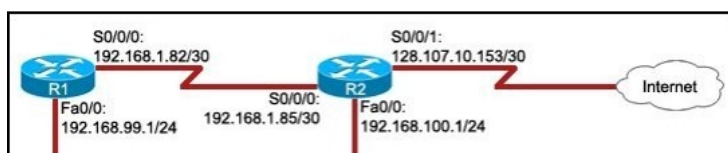
C 172.16.0.0 is directly connected, Serial0/0/0
C 192.168.2.0 is directly connected, Serial0/0/1
S* 0.0.0.0 is directly connected, Serial0/0/1

S 172.16.1.0 [1/0] via 172.16.2.1
C 172.16.2.0 is directly connected, Serial0/0/0
C 192.168.2.0 is directly connected, Serial0/0/1

**S 172.16.1.0 [1/0] via 172.16.2.1
C 172.16.2.0 is directly connected, Serial0/0/0
C 192.168.2.0 is directly connected, Serial0/0/1
S* 0.0.0.0 is directly connected, Serial0/0/1**

S 172.16.1.0 is directly connected, Serial0/0/0
C 172.16.2.0 is directly connected, Serial0/0/0
C 192.168.2.0 is directly connected, Serial0/0/1
S* 0.0.0.0 is directly connected, Serial0/0/1

10.



Refer to the exhibit. The hosts on the R1 LAN are unable to access the Internet. What is incorrectly configured?

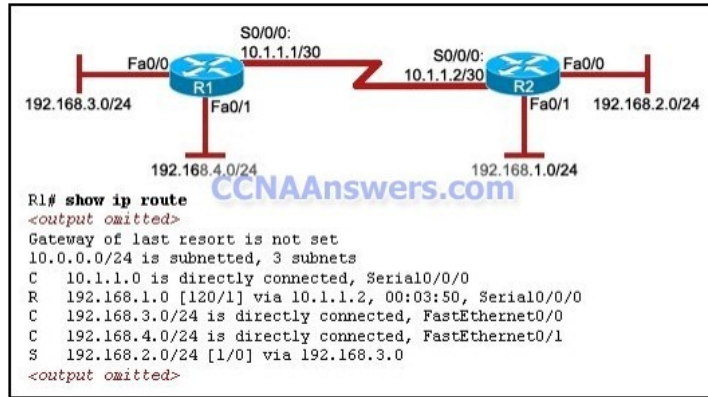
the IP address of the Fa0/0 interface at R1

the IP address of the S0/0/1 interface at R2

the IP address of the S0/0/0 interface at R1

the subnet mask of the S0/0/1 interface at R2

11.



Refer to the exhibit. A ping from R1 to 10.1.1.2 is successful, but a ping from R1 to 192.168.2.0 fails. What is the cause of this problem?

There is no gateway of last resort at R1.

The serial interface between the two routers is down.

A default route is not configured on R1.

The static route for 192.168.2.0 is incorrectly configured.

12. What is a characteristic of classful routing?

support for VLSM

the use of 48-bit addresses

routing updates do not include a subnet mask

addresses that are typically entered in hexadecimal format

13. Which three statements are true regarding the encapsulation and de-encapsulation of packets when traveling through a router? (Choose three.)

The router modifies the TTL field, decrementing it by one.

The router changes the source IP to the IP of the exit interface.

The router maintains the same source and destination IP.

The router changes the source physical address to the physical address of the exit interface.

The router changes the destination IP to the IP of the exit interface.

The router sends the packet out all other interfaces, besides the one it entered the router on.

14. Which routing protocol maintains a topology table separate from the routing table?

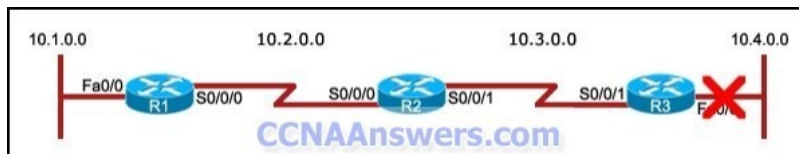
IGRP

RIPv1

RIPv2

EIGRP

15.



Refer to the exhibit. The 10.4.0.0 network fails. What mechanism prevents R2 from receiving false update information regarding the 10.4.0.0 network?

split horizon

hold-down timers

route poisoning

triggered updates

16. Which two router component and operation pair are correctly described? (Choose two.)

DRAM – loads the bootstrap

RAM – stores the operating system

Flash – executes diagnostics at bootup

NVRAM – stores the configuration file

ROM – stores the backup configuration file

POST – runs diagnostics on hardware modules

17. Which multicast address does EIGRP use to send hello and updates packets?

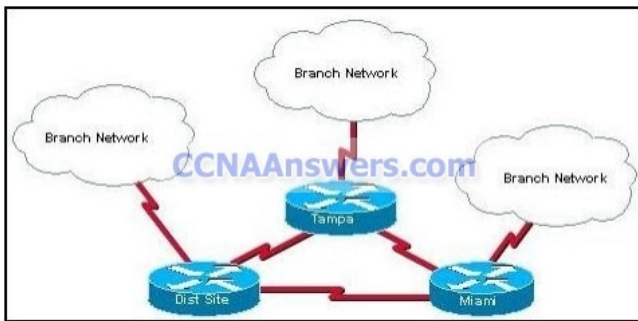
224.0.0.5

224.0.0.6

224.0.0.9

224.0.0.10

18.



Refer to the exhibit. The network consists of hundreds of routers branched from connected regional distribution sites using single area OSPF. Recent network failures caused packet flooding and route recalculations in all branch networks. What should the engineer do to minimize the effect of the routing instabilities?

Adopt RIPv2 which is not subject to packet flooding.

Implement static routing.

Implement a mix of routing protocols to contain the instabilities.

Change the topology to a hierarchical design which puts each branch network in its own area.

19. A network administrator is using an application that is monitoring packets on the network and sees an EIGRP update packet. What is the purpose of the update packet?

The packet is sent to discover neighbors within the EIGRP network.

The packet is sent to search for network devices within an EIGRP network.

The packet is used to propagate routing information within the EIGRP network.

The packet is used to send an unreachable reply to another router within the EIGRP network.

The packet is used to notify all routers that EIGRP has failed on one of the routers within the EIGRP network.

20. A router boots and enters setup mode. What is the reason for this?

The IOS image is corrupt.

Cisco IOS is missing from flash memory.

The configuration file is missing from NVRAM.

The POST process has detected hardware failure.

21. Which of the following are required when adding a network to the OSPF routing process configuration? (Choose three.)

network address

loopback address

autonomous system number

subnet mask

wildcard mask

area ID

22. Which prompt is used to allow a user to change the IP address of an interface on a router?

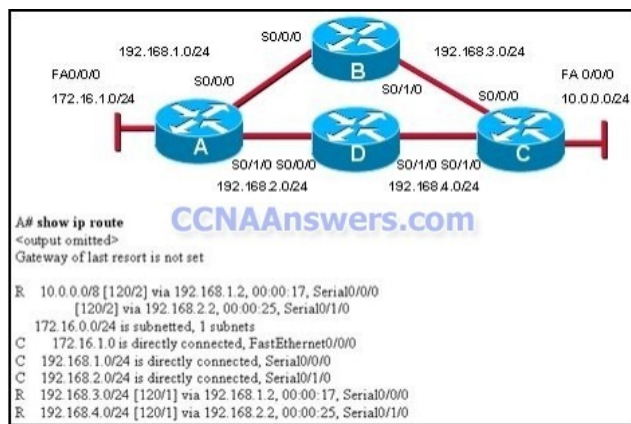
Router>

Router#

Router(config)#

Router(config-if)#

23.



Refer to the exhibit. Which path will traffic from the 172.16.1.0/24 network take to get to the 10.0.0.0/24 network?

ADC

ABC

It will load balance the traffic between ADC and ABC

It will send the traffic via ABC, and will use ADC as a backup path only when ABC fails.

24. Which statement correctly describes a feature of RIP?

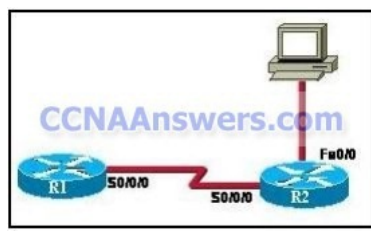
RIP is a link-state routing protocol.

RIP uses only one metric—hop count—for path selection.

Advertised routes with hop counts greater than 10 are unreachable.

Messages are broadcast every 10 seconds.

25.



Refer to the exhibit. R1 and R2 are both configured with RIPv1. Beginning from global configuration mode, what command or commands will eliminate RIP updates on the Ethernet segment of R2?

R2# configure terminal
R2(config)# router rip
R2(config-router)# passive-interface FastEthernet0/0

R2# configure terminal
R2(config)# passive-interface FastEthernet0/0

R2# passive-interface FastEthernet0/0

R2# configure terminal
R2(config)# interface FastEthernet0/0
R2(config-if)# passive-interface FastEthernet0/0

26. In a complex lab test environment, a router has discovered four paths to 192.168.1.0/24 via the use of the RIP routing process. Which route will be installed in the routing table after the discovery of all four paths?

R 192.168.1.0/24 [120/3] via 192.168.110.1, 00:00:17, Serial0/1/0

R 192.168.1.0/24 [120/2] via 192.168.200.1, 00:00:17, Serial0/0/0

R 192.168.1.0/24 [120/1] via 192.168.100.1, 00:00:17, Serial0/0/1

R 192.168.1.0/24 [120/4] via 192.168.101.1, 00:00:17, Serial0/1/1

27. Which two statements are true about the router ID in a single area OSPF network? (Choose two.)

Only the DR and BDR have a router ID.

A loopback interface is required to configure the router ID.

The router ID is used to uniquely identify each router in the OSPF routing domain.

Any interface, even one not participating in the OSPF routing process, can be used to determine the router ID.

If no loopback interfaces are configured, the router chooses the highest active IP address of any of its physical interfaces.

28. Which two statements about routing protocols are accurate? (Choose two.)

OSPF supports VLSM.

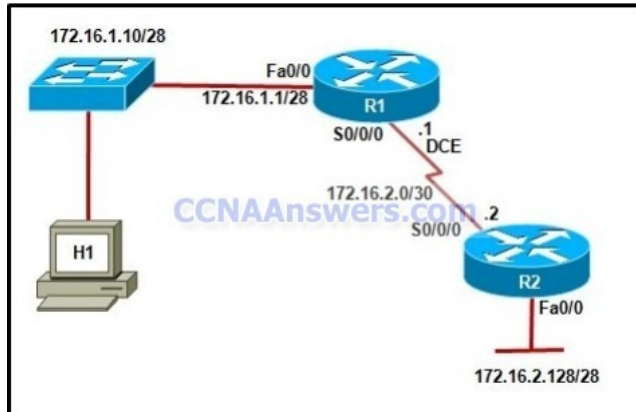
RIPv1 supports VLSM.

RIPv2 does not have a hop count limit.

EIGRP supports discontinuous network designs.

RIPv2 does not support discontinuous network designs.

29.



Refer to the exhibit. Which IP address and subnet mask can be configured on host H1 if it is to communicate with the network?

172.16.1.0 255.255.255.248

172.16.1.14 255.255.255.240

172.16.1.17 255.255.255.240

172.16.2.1 255.255.240.0

172.16.2.2 255.255.255.0

30.

```
Router#show version
Cisco IOS Software, 1841 Software (C1841-ADVIPSERVICESK9-M), Version 12.4(20)T1, RELEASE SOFTWARE (fc3)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2008 by Cisco Systems, Inc.
Compiled Wed 24-Sep-08 12:44 by prod_rel_team

ROM: System Bootstrap, Version 12.4(13r)T, RELEASE SOFTWARE (fc1)

Router uptime is 2 minutes
System returned to ROM by power-on
System image file is "flash:c1841-advipservicesk9-mz.124-20.T1.bin"

<output omitted>

Cisco 1841 (revision 7.0) with 119808K/11264K bytes of memory.
Processor board ID FHK1312218R
2 FastEthernet interfaces
2 Serial(sync/async) interfaces
1 Virtual Private Network (VPN) Module
DRAM configuration is 64 bits wide with parity disabled.
191K bytes of NVRAM.
990864K bytes of ATA CompactFlash (Read/Write)

Configuration register is 0x2102

Router#
```

Refer to the exhibit. What will happen when the router reloads?

It will boot into ROMMON mode.

It will ignore the start-up configuration file.

It will look for the start-up configuration file on the TFTP server.

It will attempt to load the start-up configuration file that is stored in NVRAM.

31. You have been asked to explain converged networks to a trainee. How would you accurately describe a converged network?

A network is converged when all routers have formed an adjacency.

A network is converged immediately after a topology change has occurred.

A network is converged when all routers flush the unreachable networks from their routing tables.

A network is converged after all routers share the same information, calculate best paths, and update their routing tables.

32. A router needs an IOS upgrade. Which component must be checked to make sure it meets the requirement for the new IOS?

boot ROM

Fast Ethernet ports

flash

serial ports

UART

CPU

33.

```
R2# show ip eigrp neighbors
IP-EIGRP neighbors for process 1
H   Address           Interface   Hold Uptime   SRTT   RTO   Q   Seq   Type
  Address           Interface   (sec)         (ms)          Cnt  Num
1   192.168.10.10      Se0/0/1     10 00:01:41   20     200   0    7
0   172.16.3.1         Se0/0/0     10 00:09:49   25     200   0   28
<output omitted>
```

Refer to the exhibit. What information can be determined from the displayed output?

EIGRP packets are waiting to be sent to the neighbors.

The adjacencies between the routers are yet to be established.

The IP address 192.168.10.10 is configured at serial interface S0/0/1 of router R2.

Router R2 is receiving hello packets from a neighbor with the IP address 192.168.10.10 via the R2 S0/0/1 interface.

34. Which default EIGRP configuration must be modified to allow an EIGRP router to advertise subnets that are configured with VLSM?

split horizon

metric K values

autosummarization

hello and dead intervals

35. Which protocol is used by EIGRP to deliver and receive update packets?

FTP

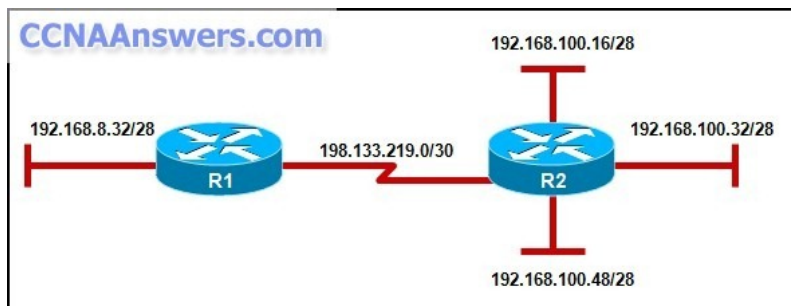
RTP

TCP

TFTP

UDP

36.



Refer to the exhibit. Which option will provide the configuration that is needed for router R1 to dynamically learn routes to the 192.168.100.16/28, 192.168.100.32/28, and 192.168.100.48/28 subnetworks?

with static routes

with a routed protocol

with a routing protocol

with directly connected routes

37. A network administrator is setting up a new router with a device name of Admin, an encrypted password of cangetin, and the IP address 192.168.1.22/29 assigned to the first FastEthernet interface. Which command sequence correctly configures this router?

```
Router(config)# hostname Admin
Admin(config)# enable secret cangetin
Admin(config)# interface fa0/1
Admin(config-if)# ip address 192.168.1.22 255.255.255.248
```

```
Router(config)# hostname Admin
Admin(config)# enable password cangetin
Admin(config)# interface fa0/1
Admin(config-if)# ip address 192.168.1.22 255.255.255.248
```

```
Router(config)# hostname Admin
Admin(config)# enable secret cangetin
Admin(config)# interface fa0/0
Admin(config-if)# ip address 192.168.1.22 255.255.255.248
```

```
Router(config)# hostname Admin
Admin(config)# enable password cangetin
```

```
Admin(config)# interface fa0/0
Admin(config-if)# ip address 192.168.1.22 255.255.255.248
```

38. All routers in a network are configured in a single OSPF area with the same priority value. No loopback interface has been set on any of the routers. Which secondary value will the routers use to determine the router ID?

The highest MAC address among the active interfaces of the network will be used.

There will be no router ID until a loopback interface is configured.

The highest IP address among the active FastEthernet interfaces that are running OSPF will be used.

The highest IP address among the active interfaces will be used.

39. What is the purpose of the TTL field within an IP packet header?

clears an unreachable route from the routing table after the invalid timer expires

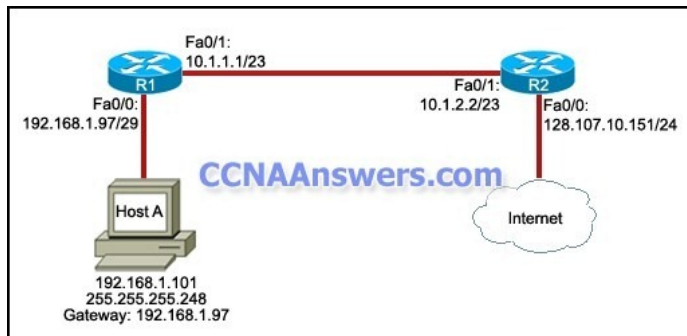
prevents regular update messages from inappropriately reinstating a route that may have gone bad

removes an unreachable route from the routing table after the flush timer expires

limits the period of time or number of hops a packet can traverse through the network before it should be discarded

used to mark the route as unreachable in a routing update that is sent to other routers

40.



Refer to the exhibit. Host A is unable to access the Internet. What is the reason for this?

The IP address of host A is incorrect.

The default gateway of host A is incorrect.

The Fa0/1 interfaces of the two routers are configured for different subnets.

The subnet mask for the Fa0/0 interface of R1 is incorrect.

41.

```
R2# show ip protocols
Routing Protocol is "rip"
<output omitted>
Default version control: send version 2, receive 2
Interface          Send  Recv
FastEthernet0/0    2     2
Serial0/0/0        2     2
Automatic network summarization is not in effect
Maximum path: 4
Routing for Networks:
  10.0.0.0
  209.165.200.0
Passive Interface(s):
Routing Information Sources:
Gateway            Distance  Last Update
209.165.200.234    120      00:00:14
Distance: (default is 120)

R1# show ip protocols
Routing Protocol is "rip"
<output omitted>
Default version control: send version 1, receive any version
Interface          Send  Recv
FastEthernet0/0    1     1
Serial0/0/0        1     1
Automatic network summarization is in effect
Maximum path: 4
Routing for Networks:
  172.30.0.0
  209.165.200.0
Passive Interface(s):
Routing Information Sources:
Gateway            Distance  Last Update
209.165.200.230    120      00:00:08
Distance: (default is 120)
```

Refer to the exhibit. R1 and R2 are adjacent routers both running RIP. All interfaces on both routers are correctly configured and operational. Both routers are configured to include all connected interfaces in routing updates. R2 is not showing any routes from R1 in the routing table. What is the likely cause?

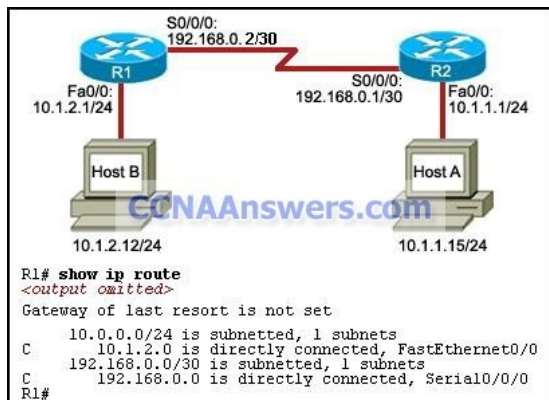
The adjacent interfaces are passive.

The distance of 120 exceeds 15 hops.

R2 will not accept version 1 updates from R1.

Routes are being summarized by R1 but not by R2.

42.



Refer to the exhibit. Router R2 is configured properly and all interfaces are functional. Router R1 has been installed recently. Host A is unable to ping host B.
Which procedure can resolve this problem?

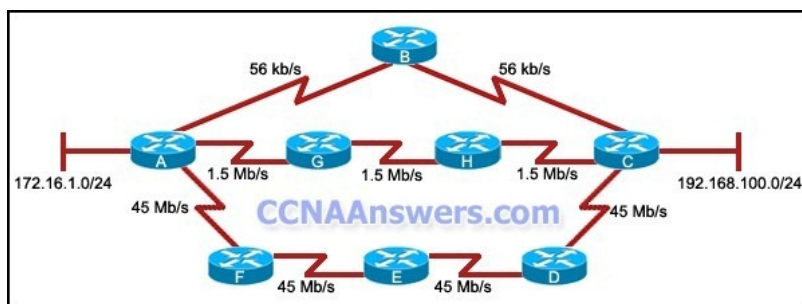
Configure a static route on R1 using the IP address of the serial interface on R1.

Configure a default route on R1 with the exit interface Fa0/0 on R1.

Configure a static route on R1 using the IP address of S0/0/0 on R2.

Configure a default route on R1 using the IP address of Fa0/0 on R2.

43.



Refer to the exhibit. All routers are configured to use the EIGRP routing protocol with default settings, all routes are advertised on all routers, and the network is fully converged. Which path will the data take to travel between 172.16.1.0/24 and 192.168.100.0/24?

It will travel via A, B, and C.

It will travel via A, F, E, D, and C.

It will travel via A, G, H, and C.

The traffic will be load-balanced on all paths.

44.

Router# show ip interface brief						
Interface	IP-Address	OK?	Method	Status	Protocol	
FastEthernet0/0	192.168.3.3	Yes	manual	up	up	
FastEthernet0/1	192.168.4.2	Yes	manual	administratively down	down	
Serial0/0/0	unassigned	Yes	manual	administratively down	down	
Serial0/0/1	172.16.4.2	Yes	manual	up	up	

Refer to the exhibit. A technician has configured the interfaces on the Router, but upon inspection discovers that interface FastEthernet0/1 is not functioning. Which action will most likely correct the problem with FastEthernet0/1?

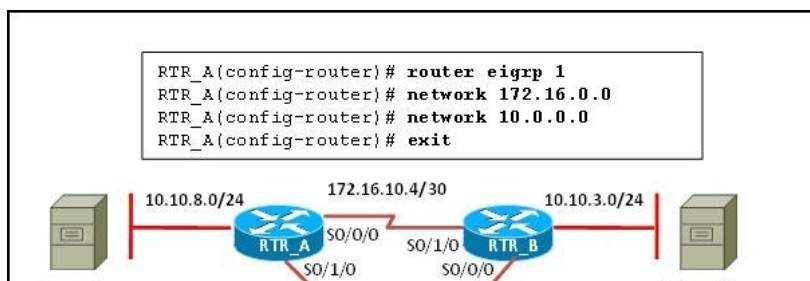
A clock rate should be added to the interface configuration.

The subnet mask should be added to the interface configuration.

An interface description needs to be added to the interface configuration.

The no shutdown command needs to be added to the interface configuration.

45.





Refer to the exhibit. Host A is having problems accessing server A. All routers have the same EIGRP configuration as router RTR_A. What should be done so that host A can access server A?

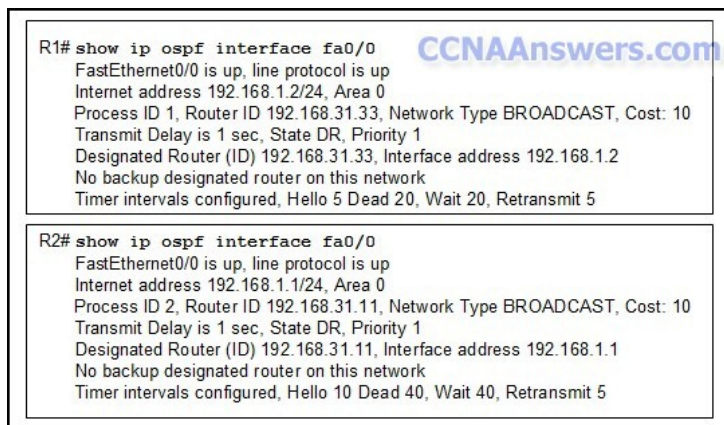
Add the command **no auto-summary** on all routers.

Change the network statements to include a wildcard mask.

Adjust the EIGRP hello timers to account for the network delay.

Add the command **eigrp log-neighbor-changes** on all routers.

46.



Refer to the exhibit. Routers R1 and R2 are directly connected through a FastEthernet link but cannot form a neighbor adjacency. What could resolve the problem?

The cost on R1 should be set higher.

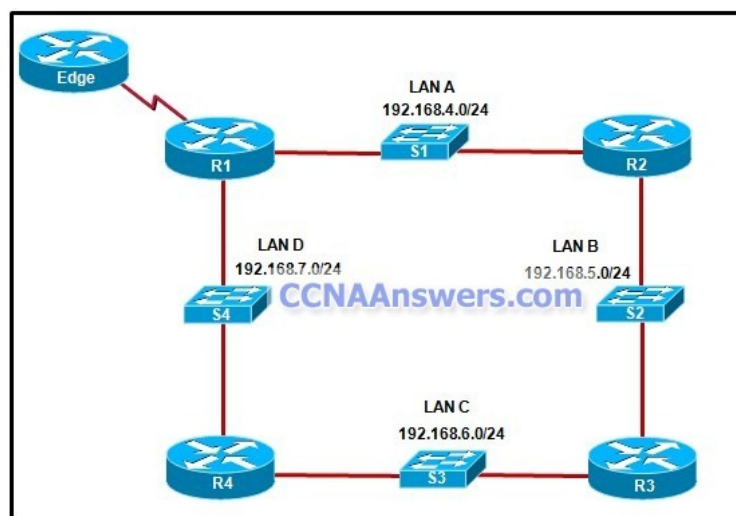
The priority on R1 should be set higher.

The OSPF process ID numbers must match.

A backup designated router needs to be added to the network.

The hello and dead timers must be configured with the same values on both routers.

47.



Refer to the exhibit. If the EIGRP routing protocol is used throughout the network, which IP address and mask prefix should be sent by router R1 to the Edge router as a result of manual summarization of LANs A, B, C, and D?

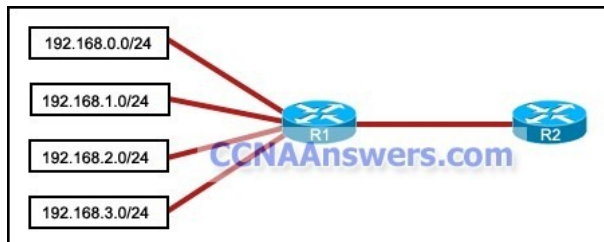
192.168.4.0/20

192.168.4.0/22

192.168.4.0/24

192.168.4.0/26

48.



Refer to the exhibit. Which summarization should R1 use to advertise its networks to R2?

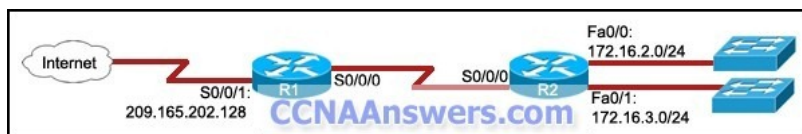
192.168.1.0/24

192.168.0.0/24

192.168.0.0/22

192.168.1.0/22

49.



Refer to the exhibit. The command `ip route 0.0.0.0 0.0.0.0 S0/0/0` is run on router R2. What are the two results of this command? (Choose two.)

A static route will be updated in the routing table.

The traffic from the Internet will be directed to R2.

The traffic from the source network 172.16.0.0/22 will be blocked.

The route will be specified as the default route for all networks not defined in the routing table.

All the broadcasts will be forwarded via the S0/0/0 interface of R2.

50. What is the function of the OSPF LSU packet?

used to confirm receipt of certain types of OSPF packets

used to establish and maintain adjacency with other OSPF routers

used to request more information about any entry in the BDR

used to announce new OSPF information and to reply to certain types of requests

51. Which of the following are primary functions of a router? (Choose two.)

packet switching

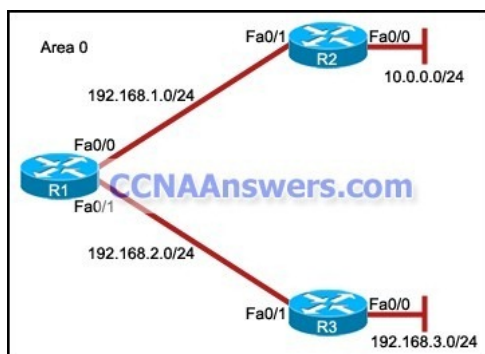
microsegmentation

domain name resolution

path selection

flow control

52.



Refer to the exhibit. The interfaces of all routers are configured for OSPF area 0. R3 can ping R1, but the two routers are unable to establish a neighbor adjacency. What should the network administrator do to troubleshoot this problem?

Check if the interfaces of the routers are enabled.

Check the hello and dead intervals between the routers.

Check the process ID of both routers.

Check if CDP is enabled on all the routers.

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James Chen January 12, 2013 at 9:42 AM

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Anonymous March 17, 2013 at 11:01 PM

Thank you very much!

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Anonymous May 28, 2013 at 8:58 PM

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Anonymous April 3, 2013 at 6:36 PM

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Anonymous April 10, 2013 at 3:38 AM

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Anonymous April 17, 2013 at 5:16 AM

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Anonymous April 25, 2013 at 1:03 AM

past papers isn't cheating



Anonymous May 1, 2013 at 6:17 PM

how is that the Future? The tenth day of the fourth month of 2013.



Anonymous July 17, 2013 at 1:10 PM

The person who thought it is the future is from the States, you are not. I'm from the States and I figured it out because I deal with people all the time from overseas. Thanks for the tips. I have my exam coming up soon.

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Anonymous April 16, 2013 at 5:02 PM

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Anonymous April 17, 2013 at 5:19 AM

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Coosta [June 19, 2013 at 11:28 AM](#)

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